AD0101018C2

Service Manual

Compact Disc Player

COMPACT disc DIGITAL AUDIO

MASH multi-stage noise shaping

SL-HD550

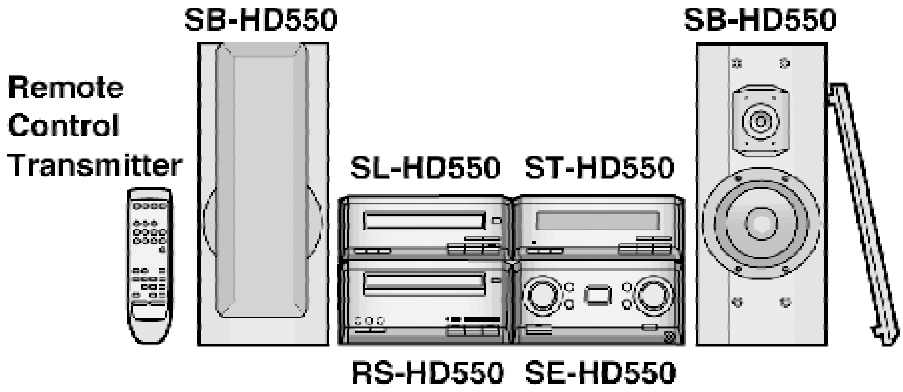
Traverse Deck: RAE0152Z Mechanism Series

Colour

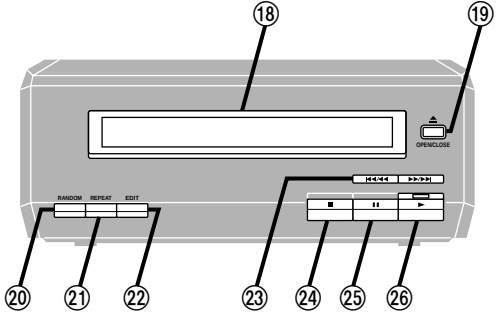
(N).....Gold Type

Area

(E).....Europe.



SPECIFICATIONS



⑱ **Disc tray**
⑲ **Disc tray open/close button (≜OPEN/CLOSE)**
⑳ **Random play button (RANDOM)**
㉑ **Repeat button (REPEAT)**
㉒ **CD edit button (EDIT)**
㉓ **Skip/search buttons (|◄◄/◄◄, ►►/►►|)**
㉔ **Stop button (■)**
㉕ **Pause button (II)**
㉖ **Play button and indicator (►)**
The color of the indicator depends on the operation taking place.
If stopped: orange
If playing: green

System	SC-HD550
Tuner	ST-HD550
Amplifier	SE-HD550
CD Player	**SL-HD550**
Cassette Deck	RS-HD550
Speakers*	SB-HD550

*: Made in Spain.

Because of unique interconnecting cables, when a component requires service, send or bring in the entire system.

Specifications

Digital output terminal: Optical×1

Audio section

DA converter: 1 bit 2 DAC MASH

Format

Sampling frequency: 44.1 kHz

Pickup

Wavelength: 780 nm

General

Dimensions (W×H×D): 210×76.3×246 mm

Mass: 1.3 kg

Notes: Specifications are subject to change without notice.
Mass and dimensions are approximate.

Note on CD-R and CD-RW
This unit may not be able to play some CD-R due to the condition of recording.
It can not play CD-RW.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Technics®

1. Note

Refer to the service manual for Model No. SE-HD550 (Order No. AD0101015C2) for information on Accessories and Packaging.

2. Before Repair

This equipment (SL-HD550), which is a component of the system, is supplied with power from the Amplifier (SE-HD550) through the Tuner (ST-HD550). When repairing this equipment or checking operation of the system, be sure to connect to other systemcomponents with it.
Power supply and operation checks in the state of it as a single equipment is impracticable.

3. Handling Precautions for Traverse Deck

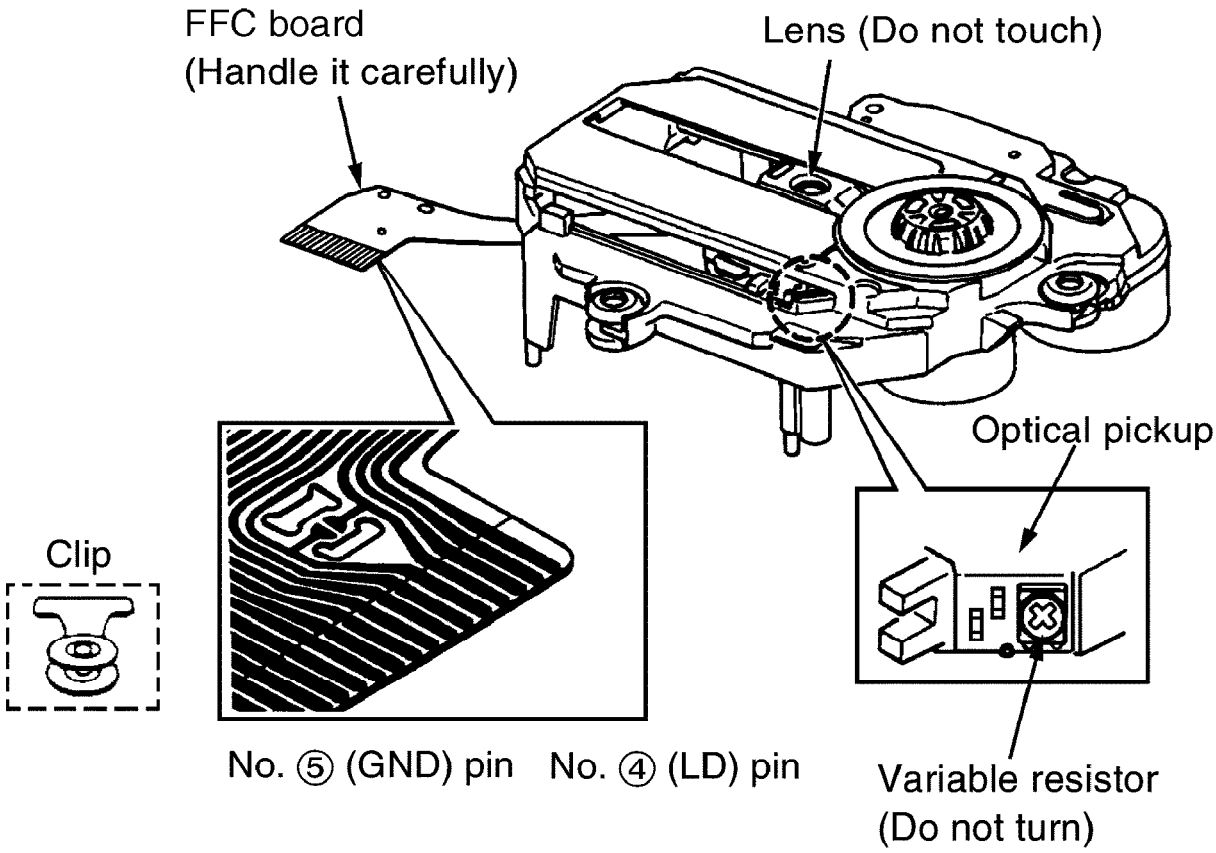
The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.
So be careful of electrostatic breakdown during repair of the traverse deck

(optical pickup).

3.1. Handling of traverse deck (optical pickup)

1. **Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.**
2. **To protect the laser diode against electrostatic breakdown, short the flexible board (FFC board) with a clip or similar object. Refer to Fig. 3-1.**
3. **Take care not to apply excessive stress to the flexible board (FFC board).**
4. **Do not turn the variable resistor (laser power adjustment). It has already been adjusted. Refer to Fig. 3-1.**

Fig. 3-1.



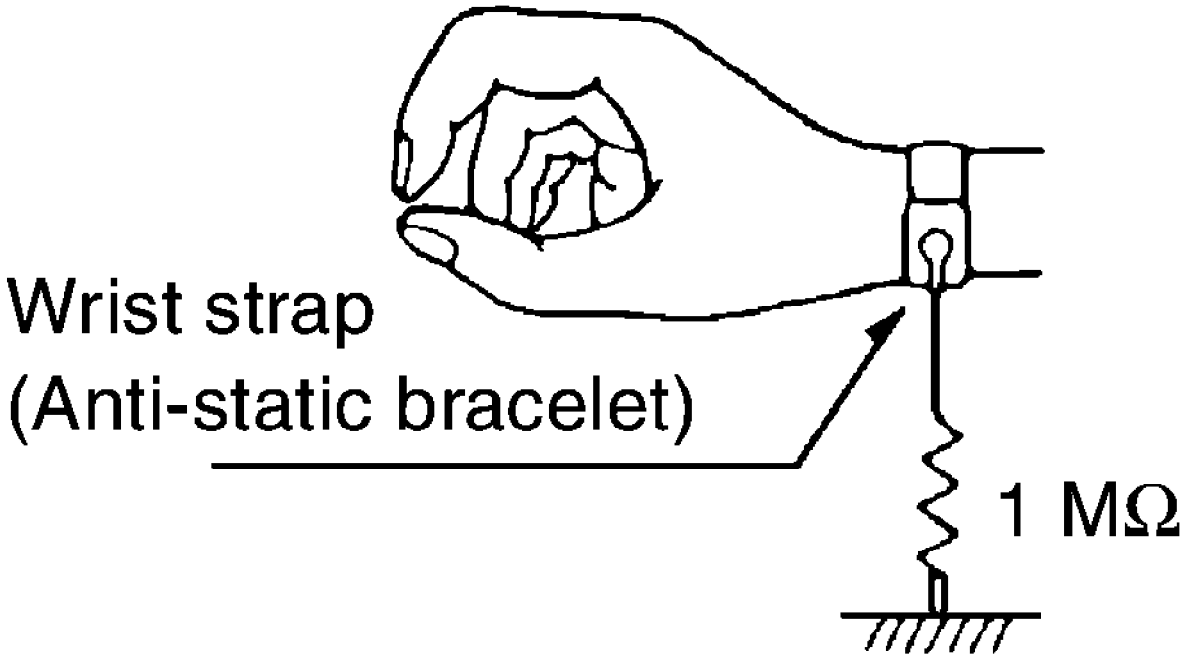
3.2. Grounding for electrostatic breakdown prevention

3.2.1. Human body grounding

Use the anti-static wrist strap to discharge the static electricity from your body.

Refer to Fig. 3-2.

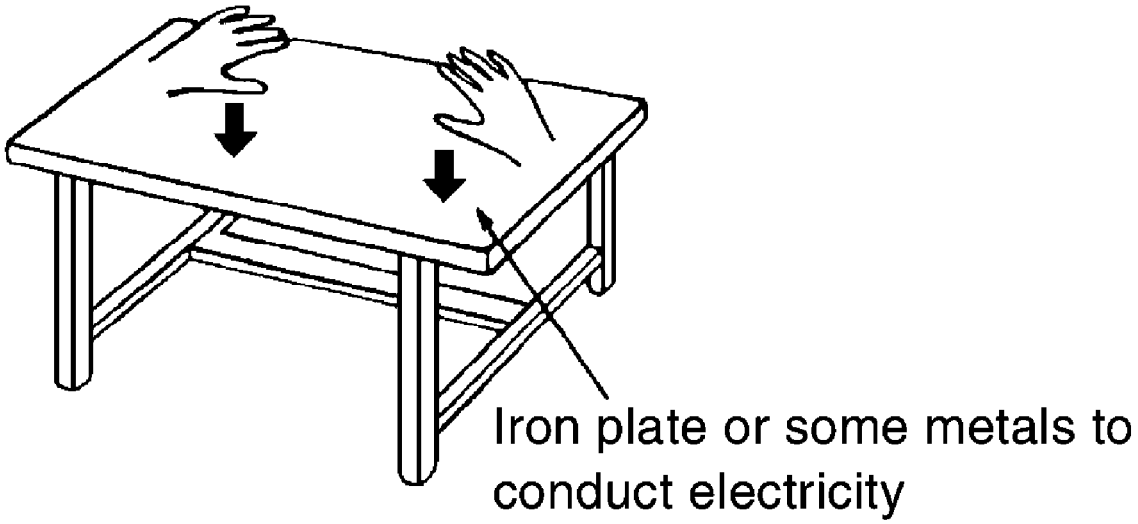
Fig. 3-2.



3.2.2. Work table grounding

Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet. Refer to Fig. 3-3.

Fig. 3-3.



Caution:

The static electricity of your clothes will not be grounded through the wrist strap.
So take care not to let your clothes touch the traverse deck (optical pickup).

4. Precaution of Laser Diode

CAUTION:
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

CAUTION: This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pickup lens.
Wave length: 780 nm
Maximum output radiation power from pickup: 100 µW/VDE

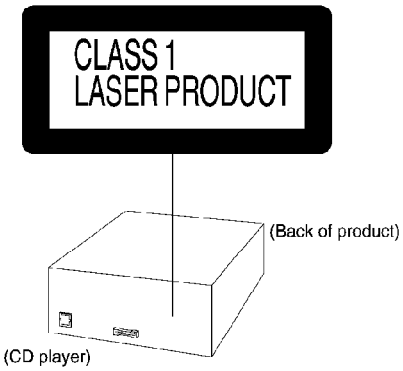
Laser radiation from the pickup unit is safety level, but be sure the followings:

1. Do not disassemble the pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

ACHTUNG: Dieses Produkt enthält eine Laserdiode. Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit adgestrahit.
Wellenlänge: 780 nm
Maximale Strahlungsleistung der Lasereinheit: 100 µW/VDE

Die strahlungan der Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werksseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlinse blicken.
4. Nicht über längere Zeit in die Fokussierlinse blicken.



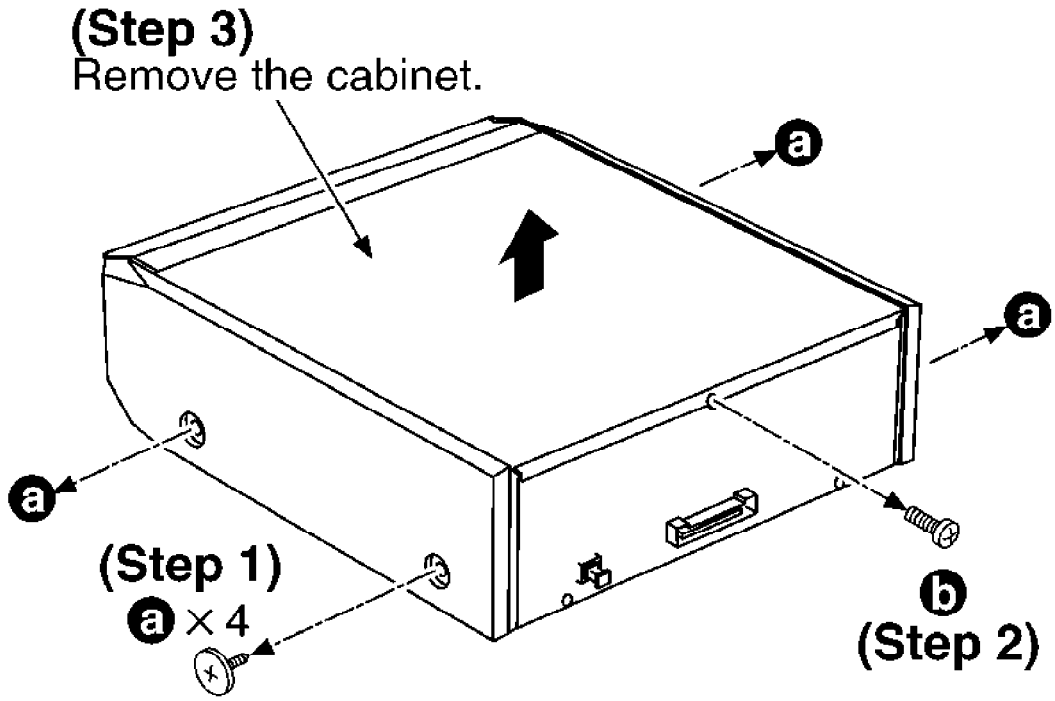
DANGER	INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.	(Inside of product)
ADVARSEL	USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.	(Indersiden at apparatet)
VAROI	AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTÖNTÄ LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.	(Tuotteen sisällä)
VARNING	OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.	(Apparatens insida)
ADVARSEL	USYNLIG LASERSTRÅLE NÅR DEKSEL ÅPNES OG SIKKERHETSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.	(Produktets innside)
VORSICHT	UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.	(Im Inneren des Gerätes)

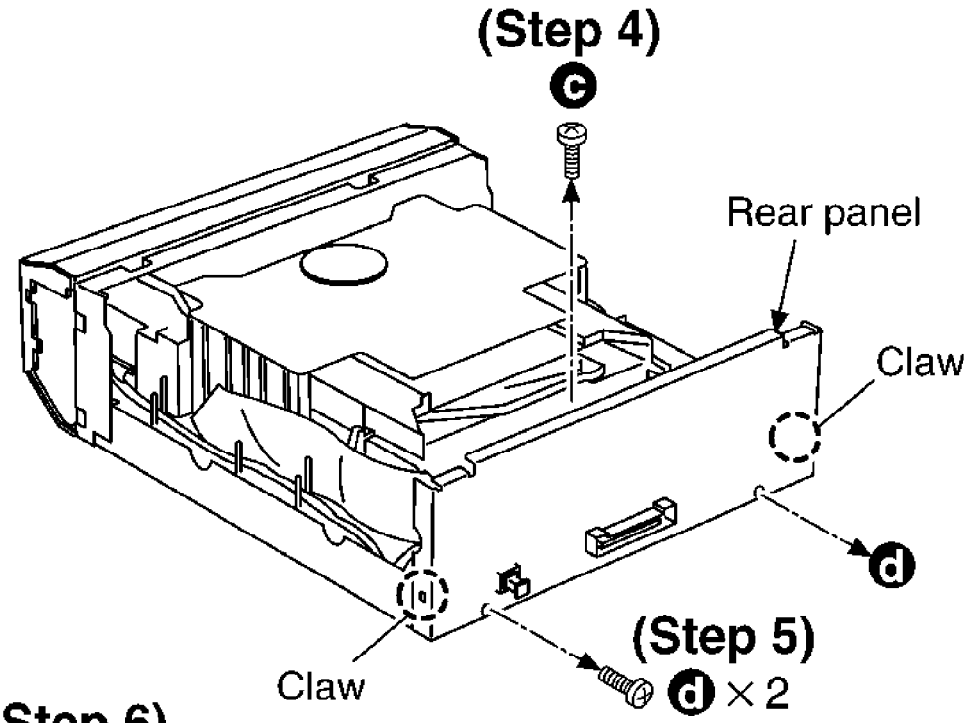
5. Location of Controls

6. Operation Checks and Component Replacement Procedures

- **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
- **For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.**

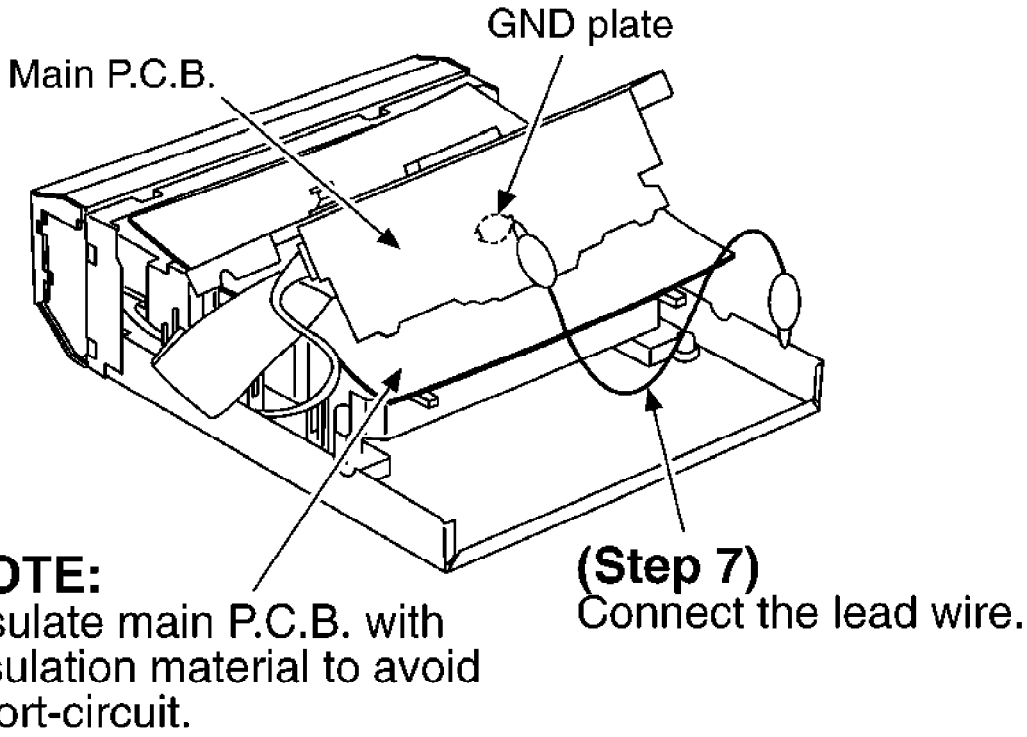
6.1. Checking for the main P.C.B.





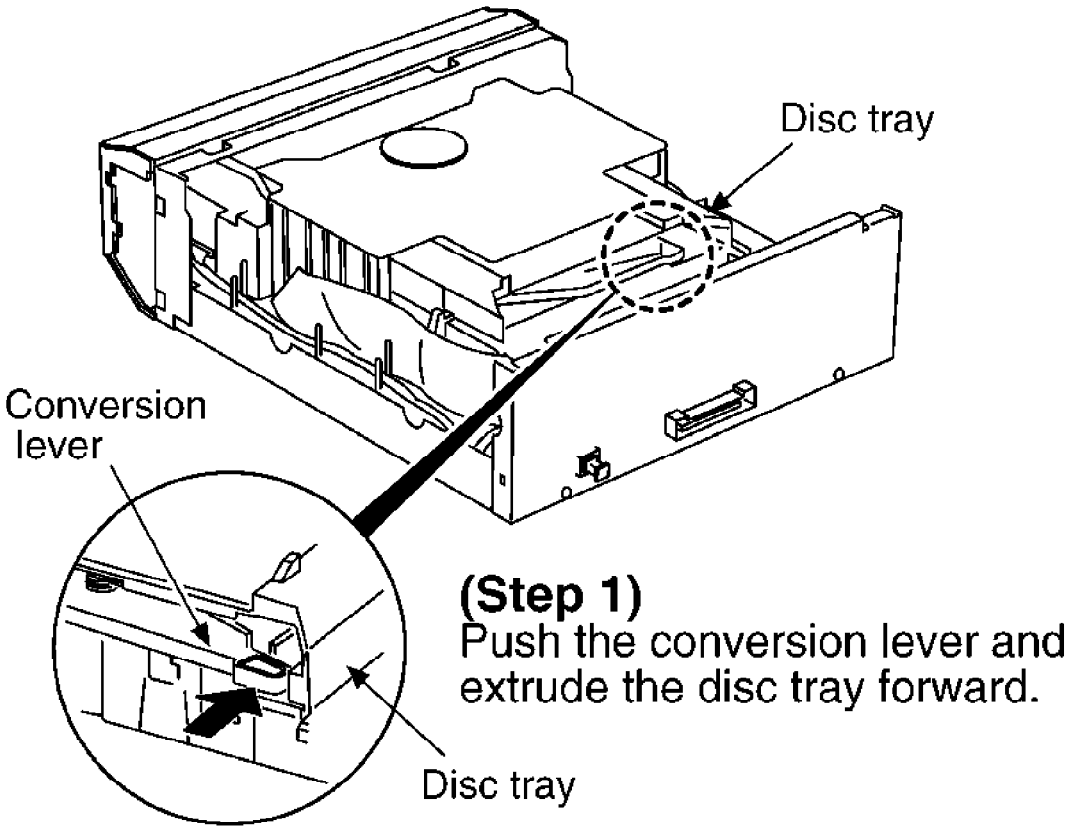
(Step 6)
Release the 2 claws, and then remove the rear panel.

- **Check the main P.C.B. as shown below.**



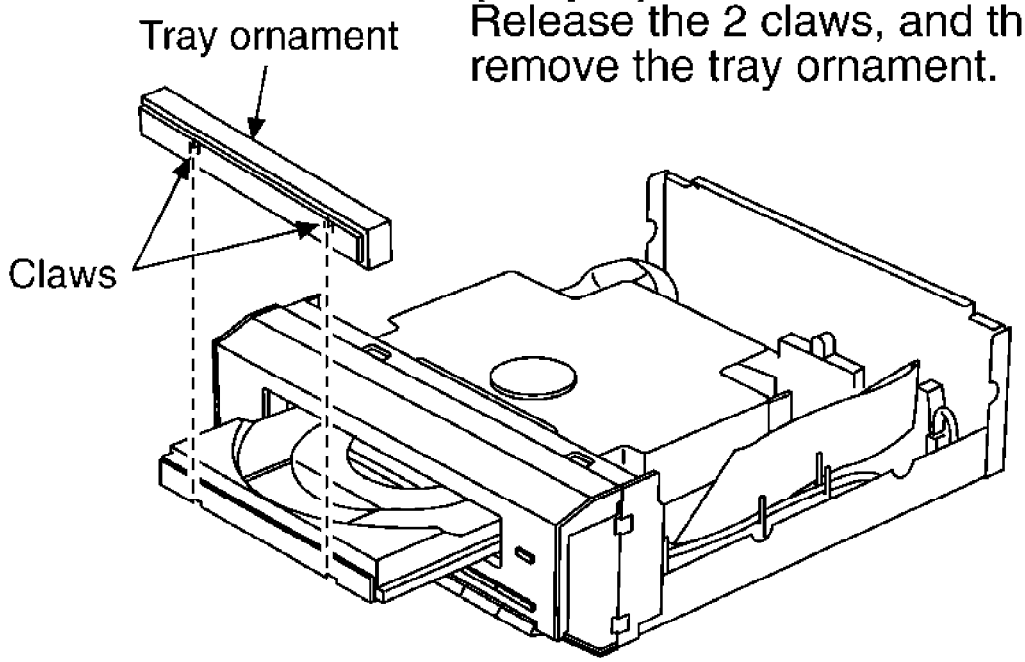
6.2. Checking for the CD servo P.C.B.

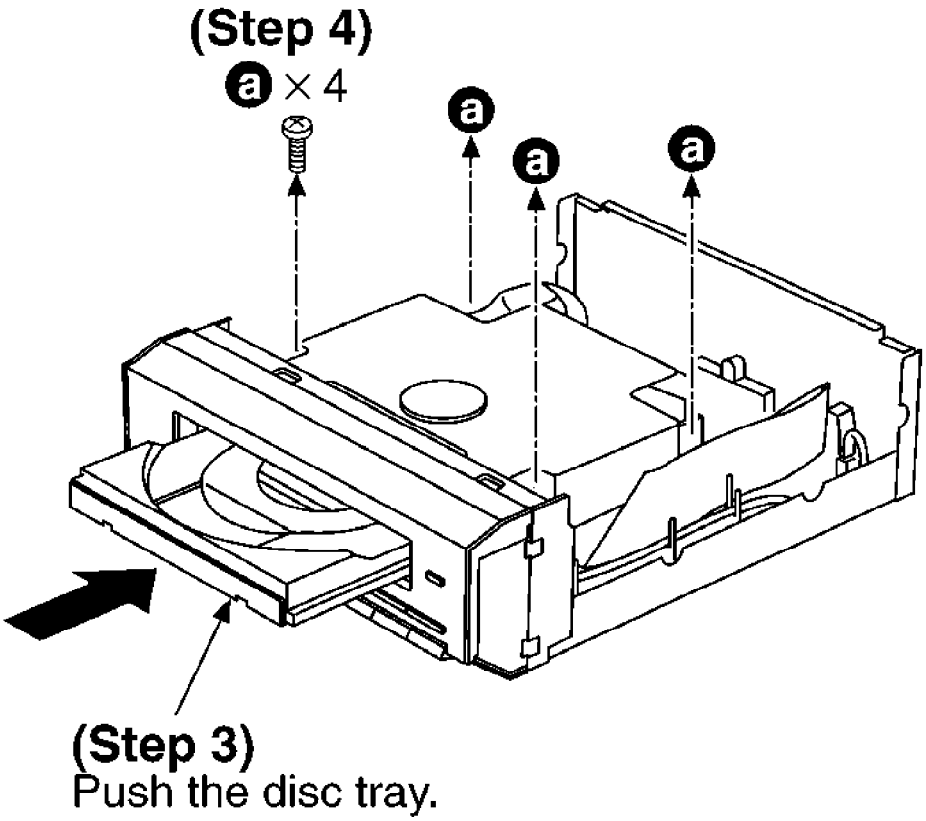
- **Follow the (Step 1) - (Step 3) of item 6.1.**

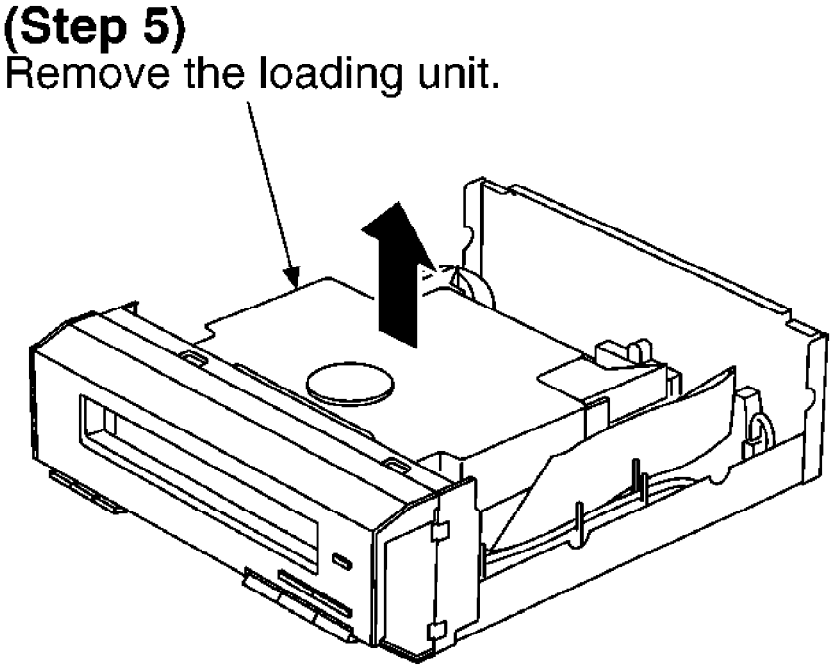


(Step 1)
Push the conversion lever and extrude the disc tray forward.

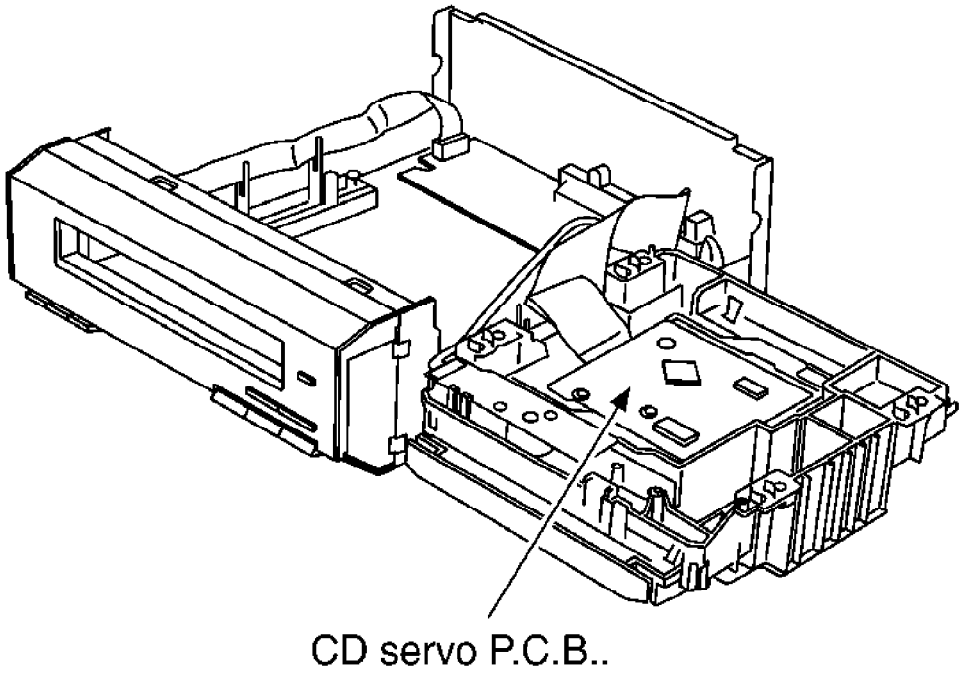
(Step 2)
Release the 2 claws, and then remove the tray ornament.





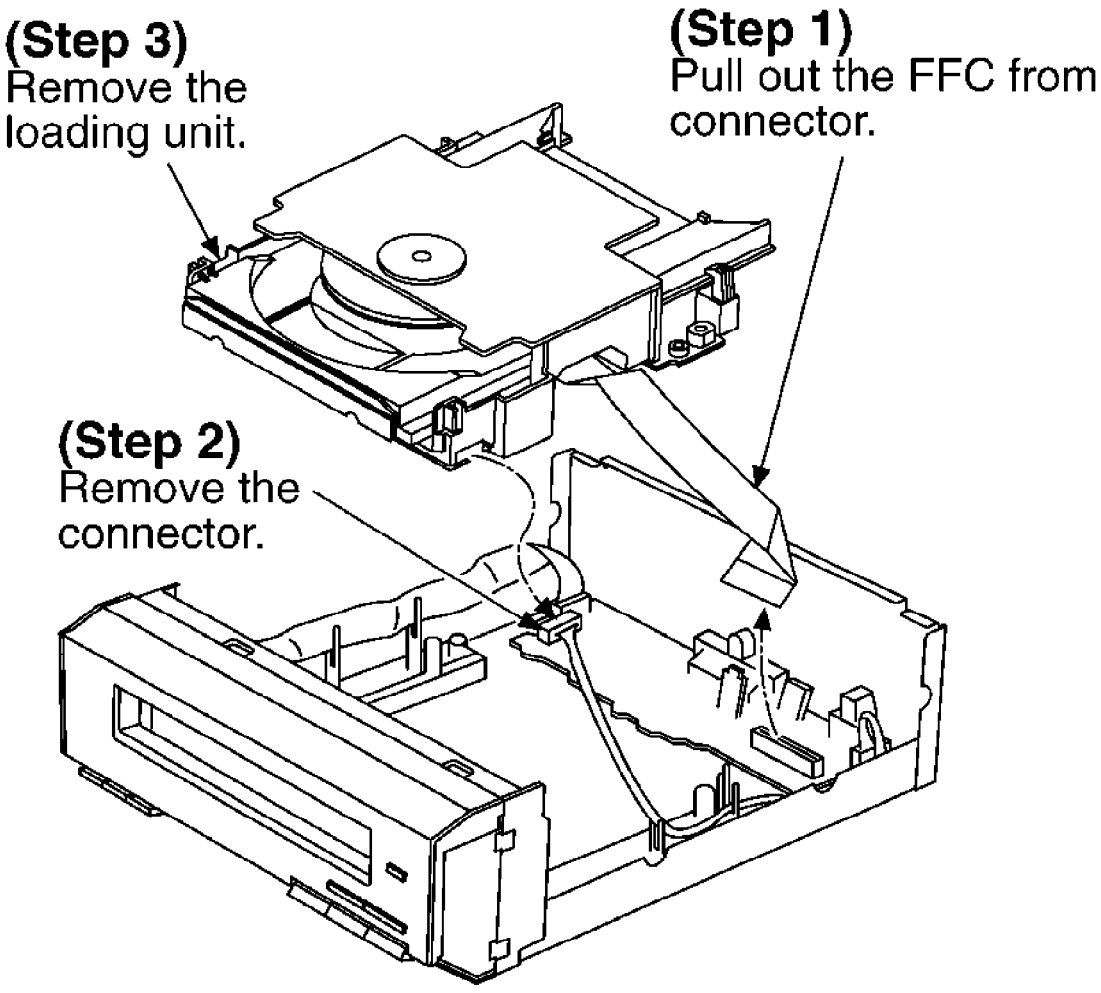


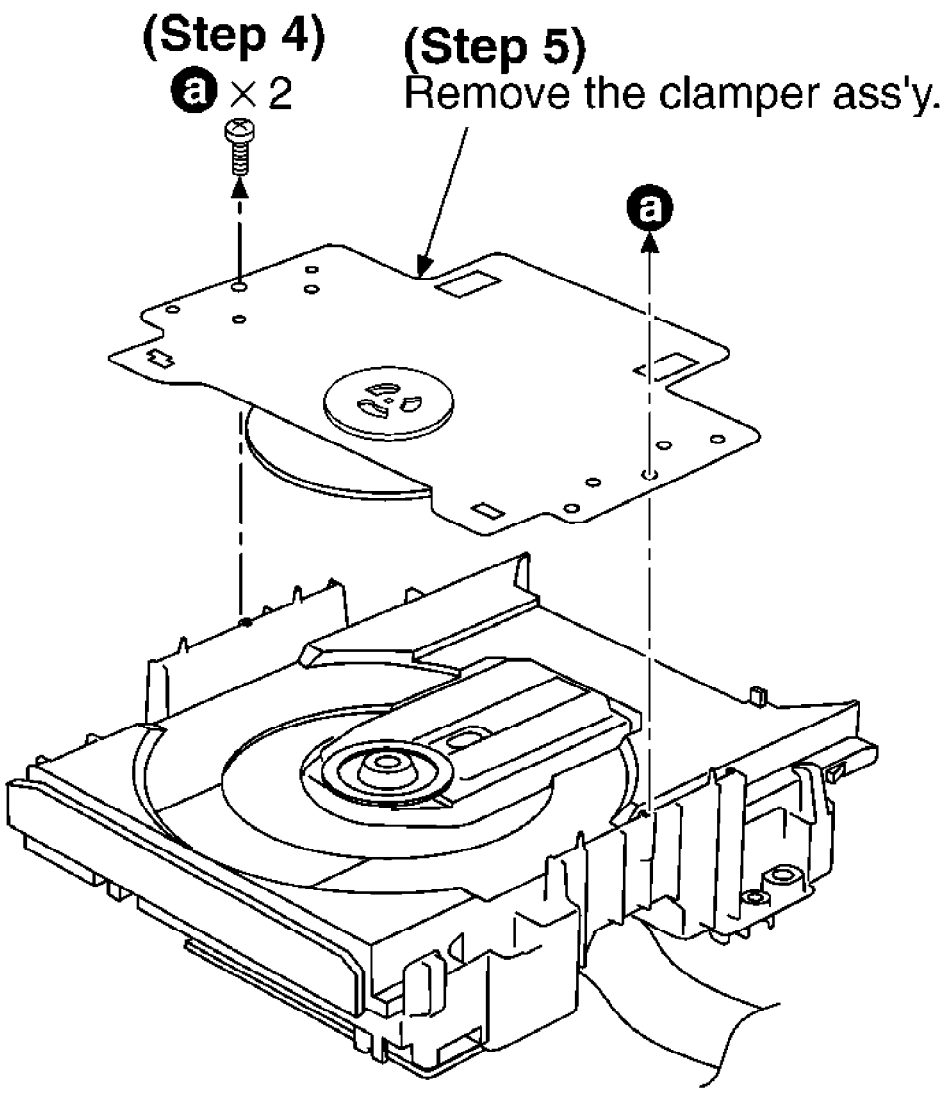
- **Check the CD servo P.C.B. as shown below.**

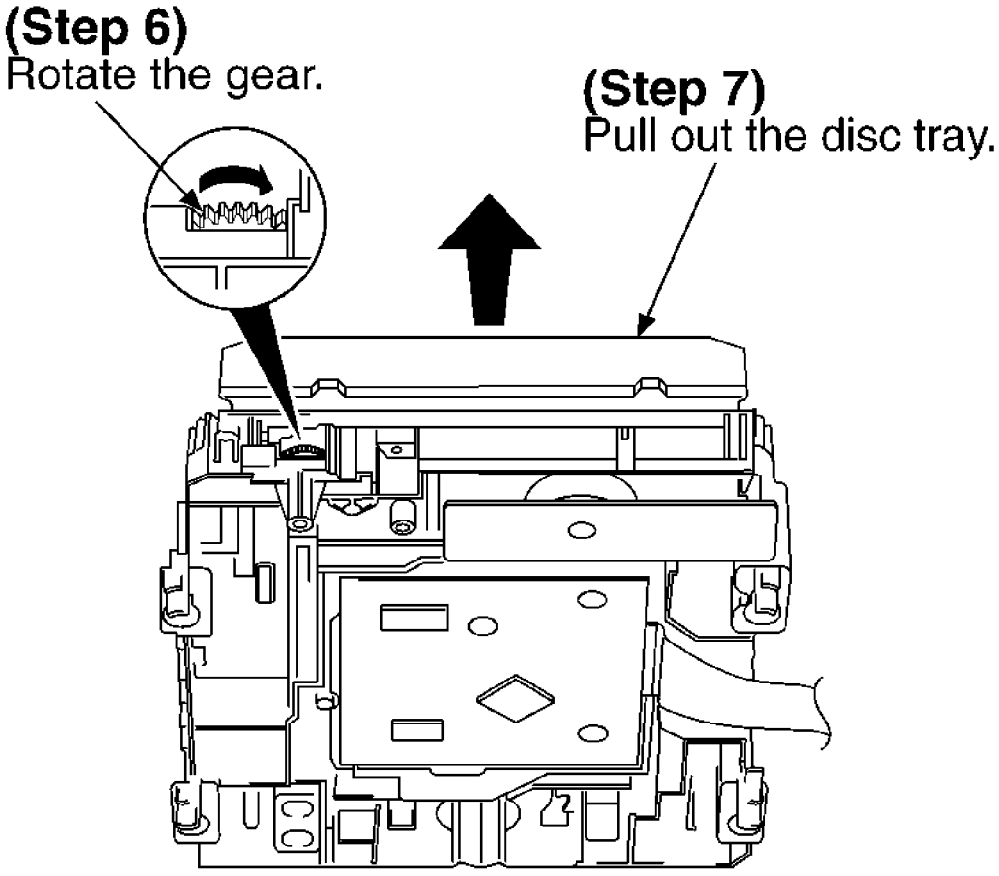


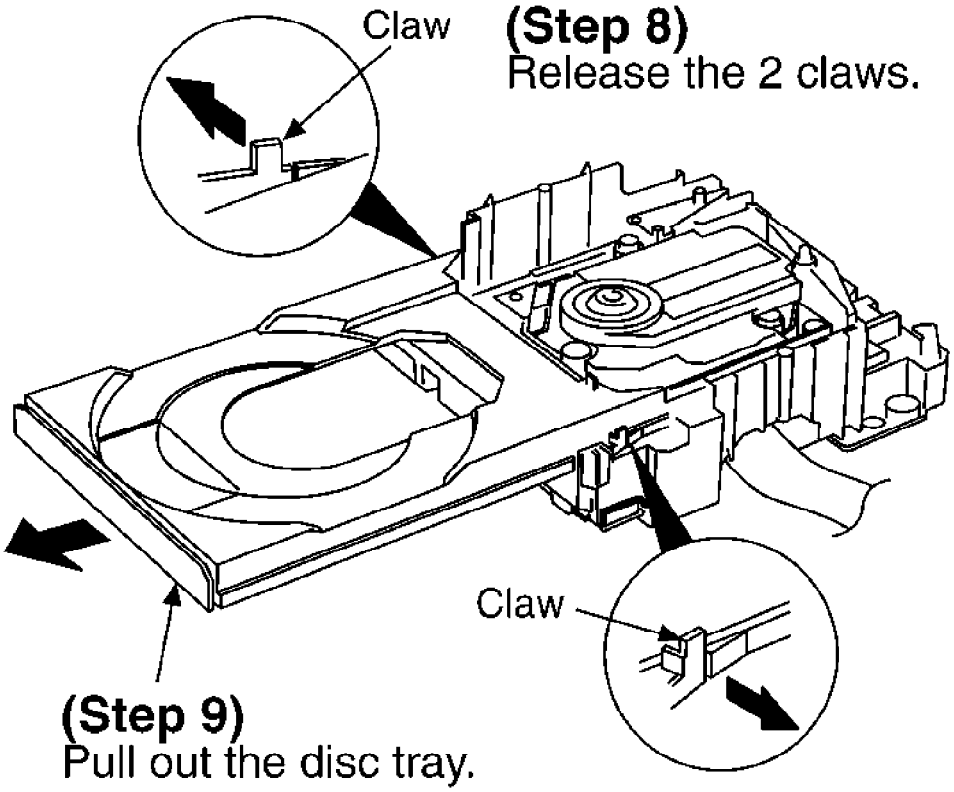
6.3. Replacement for the traverse deck ass'y

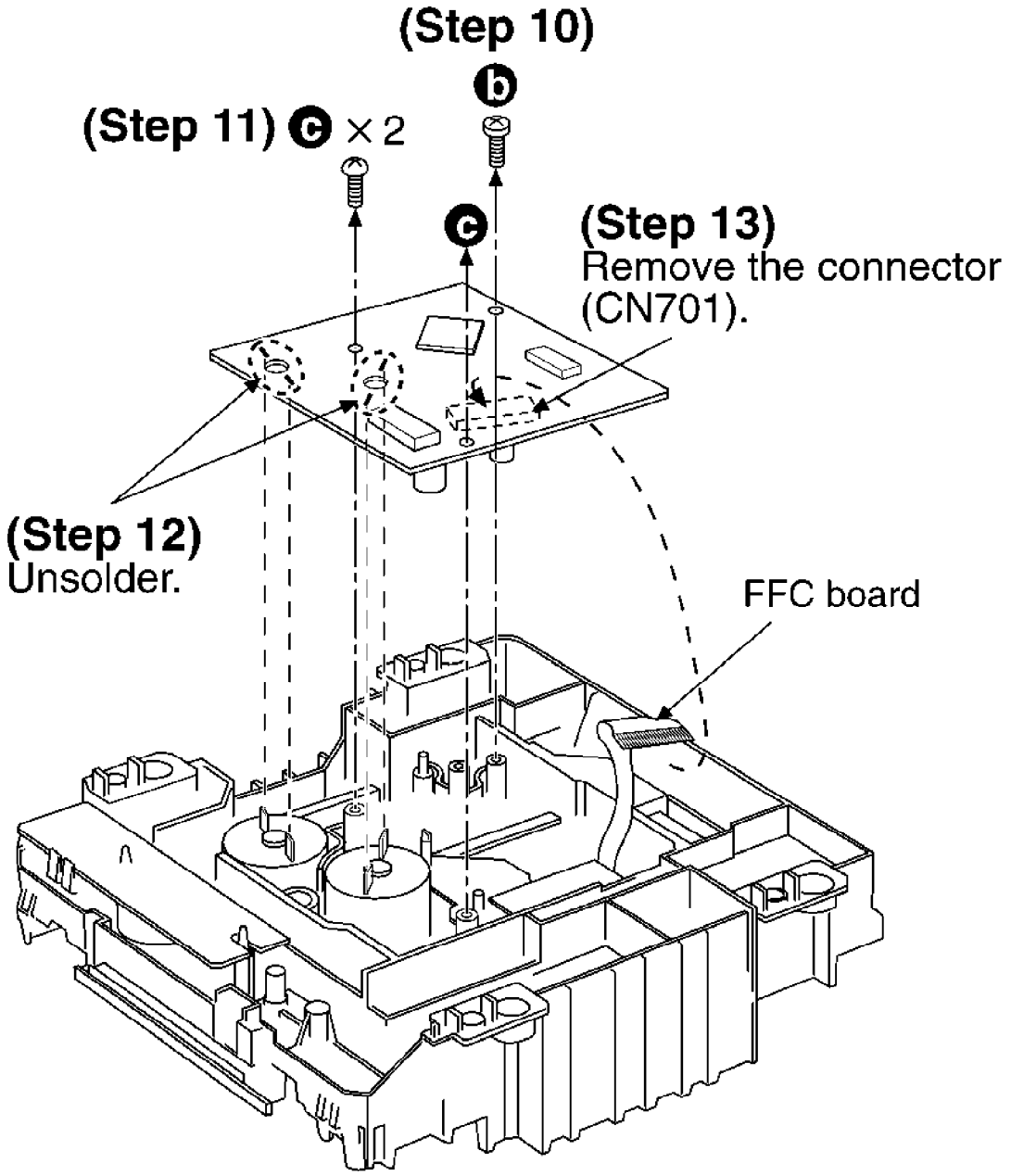
- **Follow the (Step 1) - (Step 3) of item 6.1.**
- **Follow the (Step 1) - (Step 5) of item 6.2.**


(Step 3)
Remove the loading unit.
(Step 1)
Pull out the FFC from connector.
(Step 2)
Remove the connector.


(Step 4)
ⓐ × 2
(Step 5)
Remove the clamper ass'y.
ⓐ

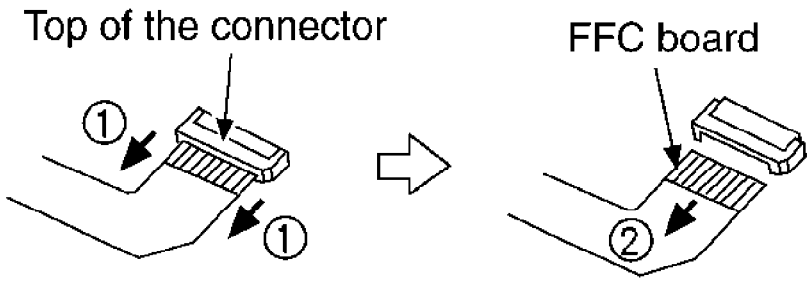

(Step 6)
Rotate the gear.
(Step 7)
Pull out the disc tray.


Claw
(Step 8)
Release the 2 claws.
Claw
(Step 9)
Pull out the disc tray.

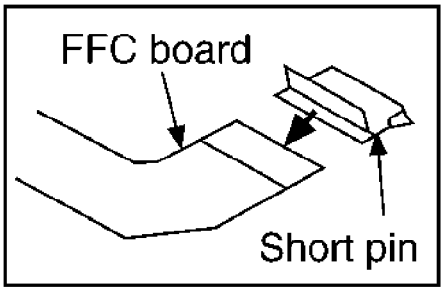

(Step 10)
ⓑ
(Step 11) ⓒ × 2
ⓒ
(Step 13)
Remove the connector
(CN701).
(Step 12)
Unsolder.
FFC board

■ Removal of the FFC board

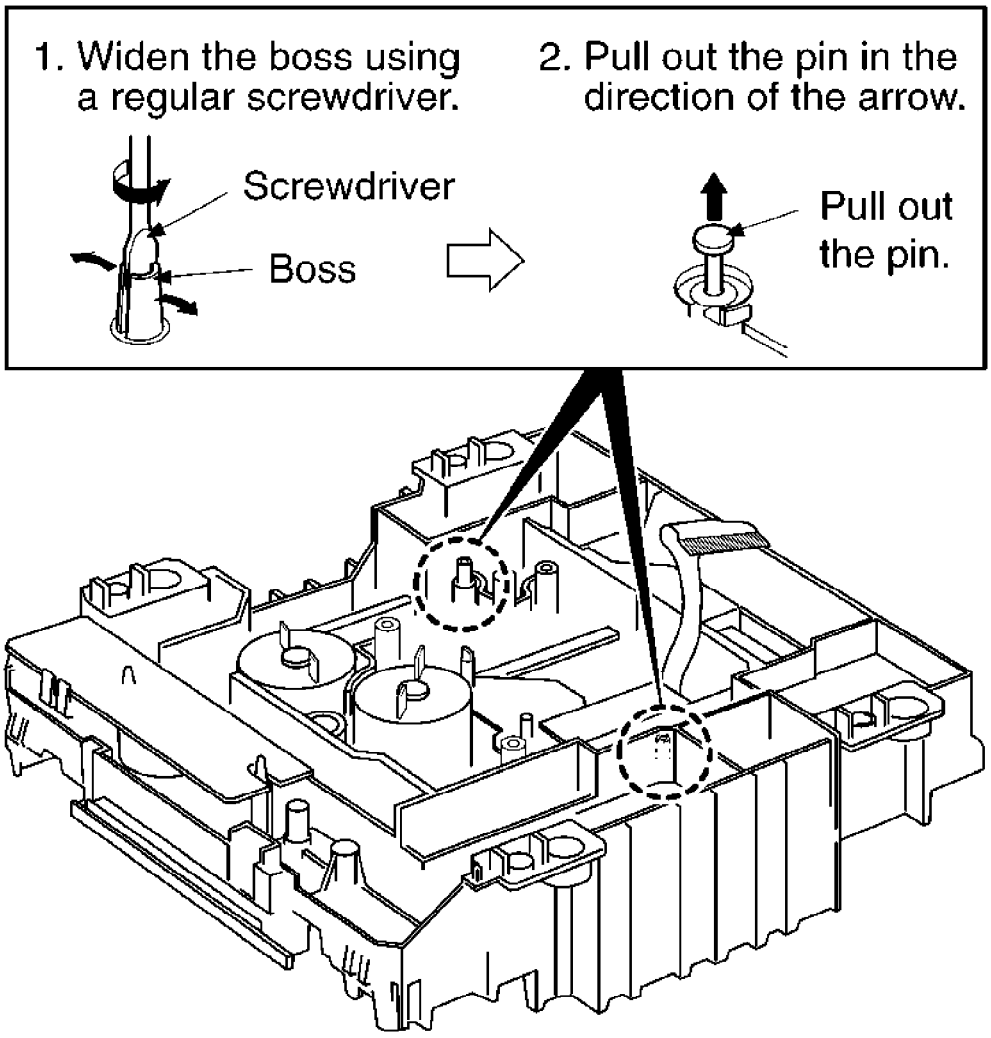
※ Push the top of the connector in the direction of arrow ①, and then pull out the FFC board in the direction of arrow ②.

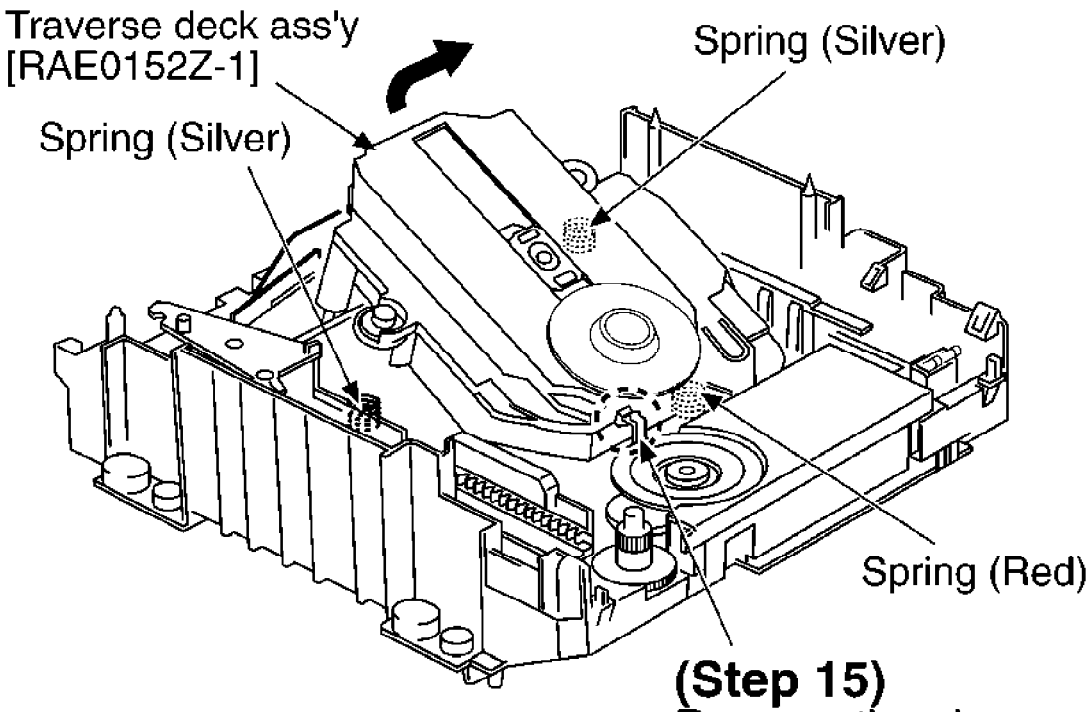


NOTE:
Insert a short pin into the traverse unit FFC board.
(Refer to "Handling Precautions for Traverse Deck".)



(Step 14)


1. Widen the boss using a regular screwdriver.
Screwdriver
Boss
2. Pull out the pin in the direction of the arrow.
Pull out the pin.

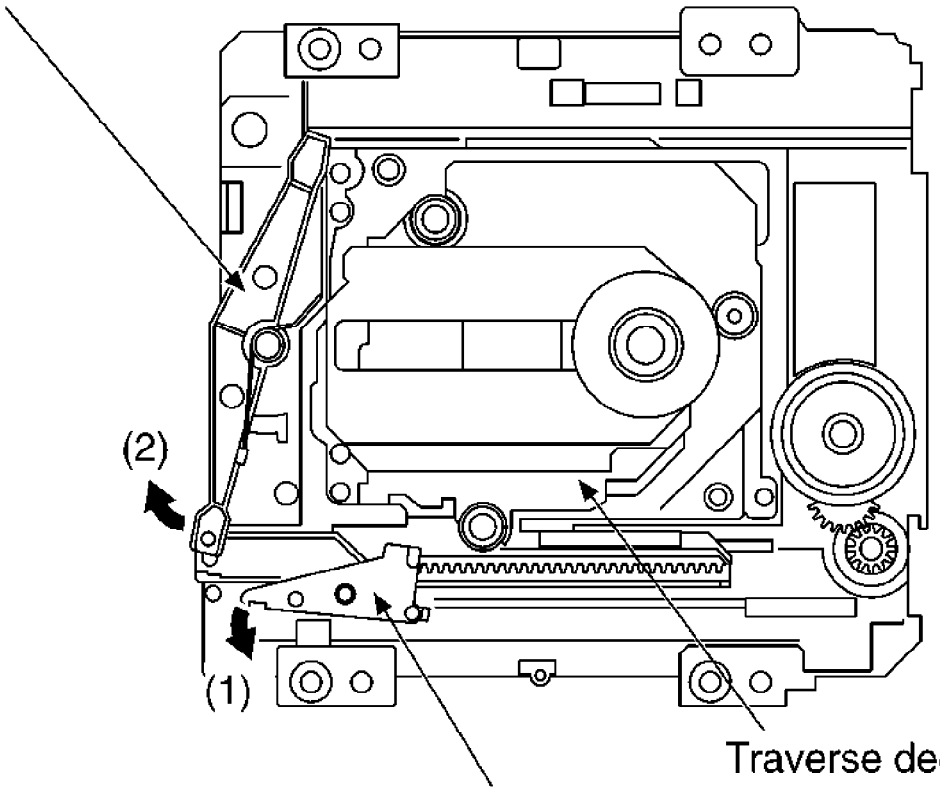


(Step 15)
Remove the claw.

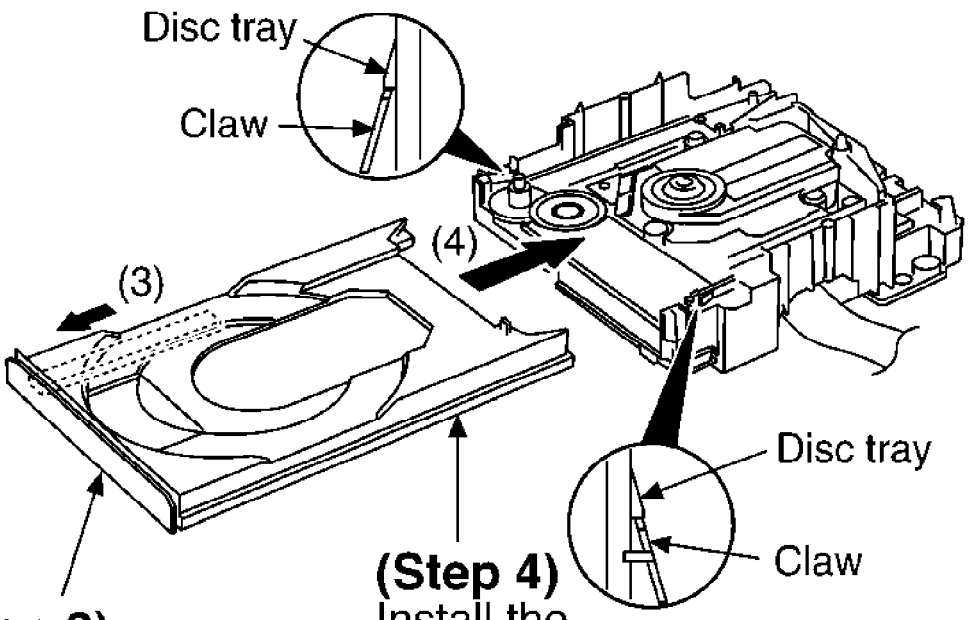
NOTE:
Be careful not to lose the 3 springs because those will also be removed on removal of the traverse deck ass'y.

Installation of the disc tray after replacement

(Step 2)
Operate the conversion lever, and then locate the traverse deck ass'y to “UP” position.



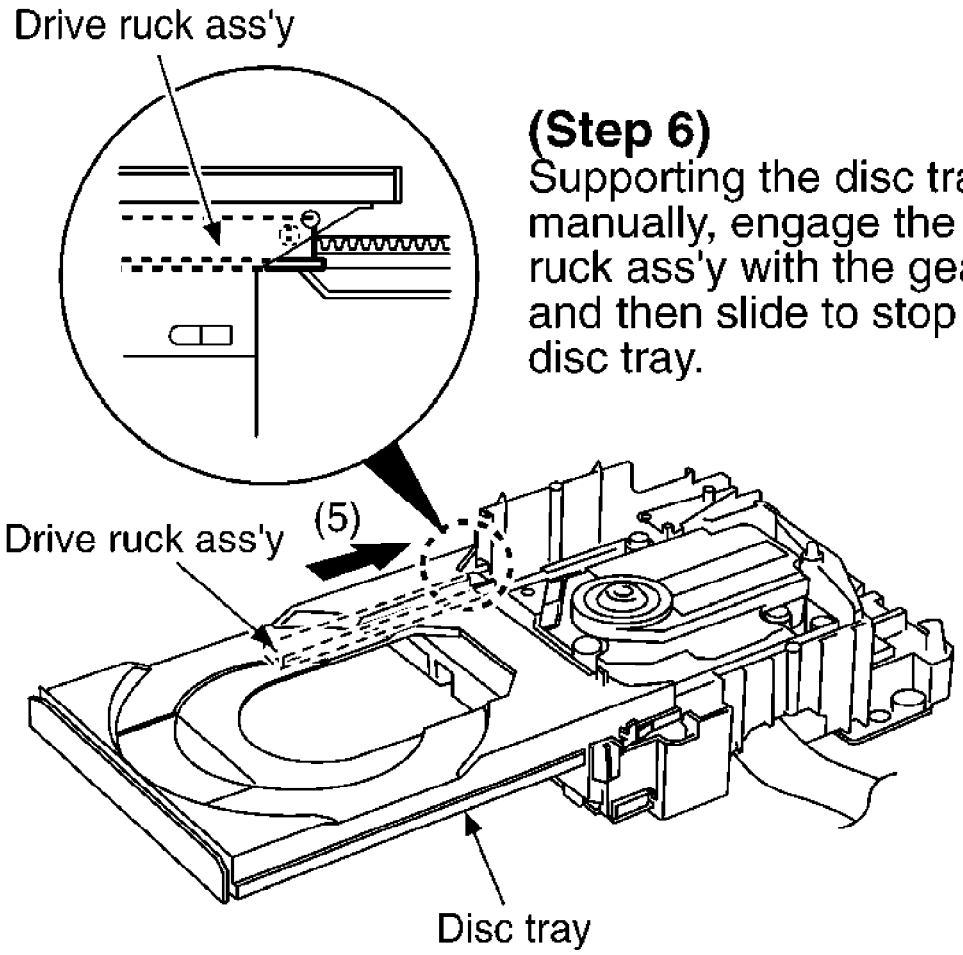
(Step 1)
Release the lock lever.



(Step 3)
Move the drive ruck ass'y in the direction of arrow (3).

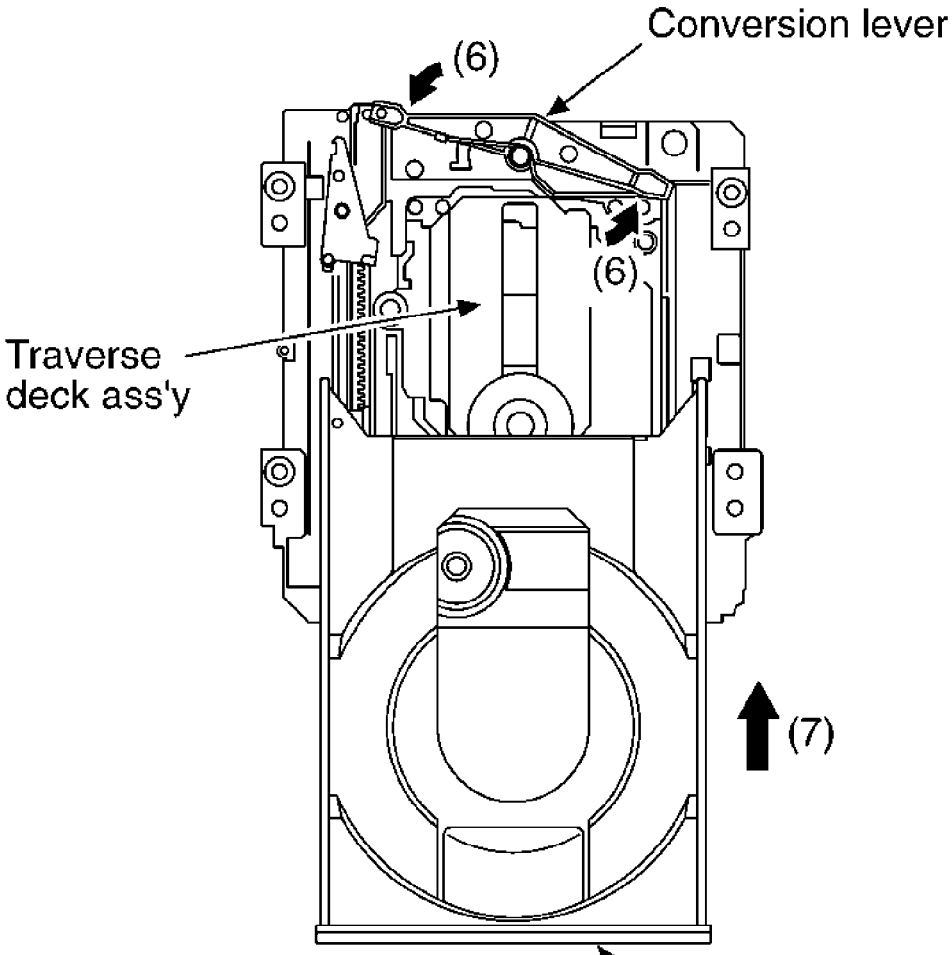
(Step 4)
Install the disc tray.

(Step 5)
Latch the claw to the disc tray.



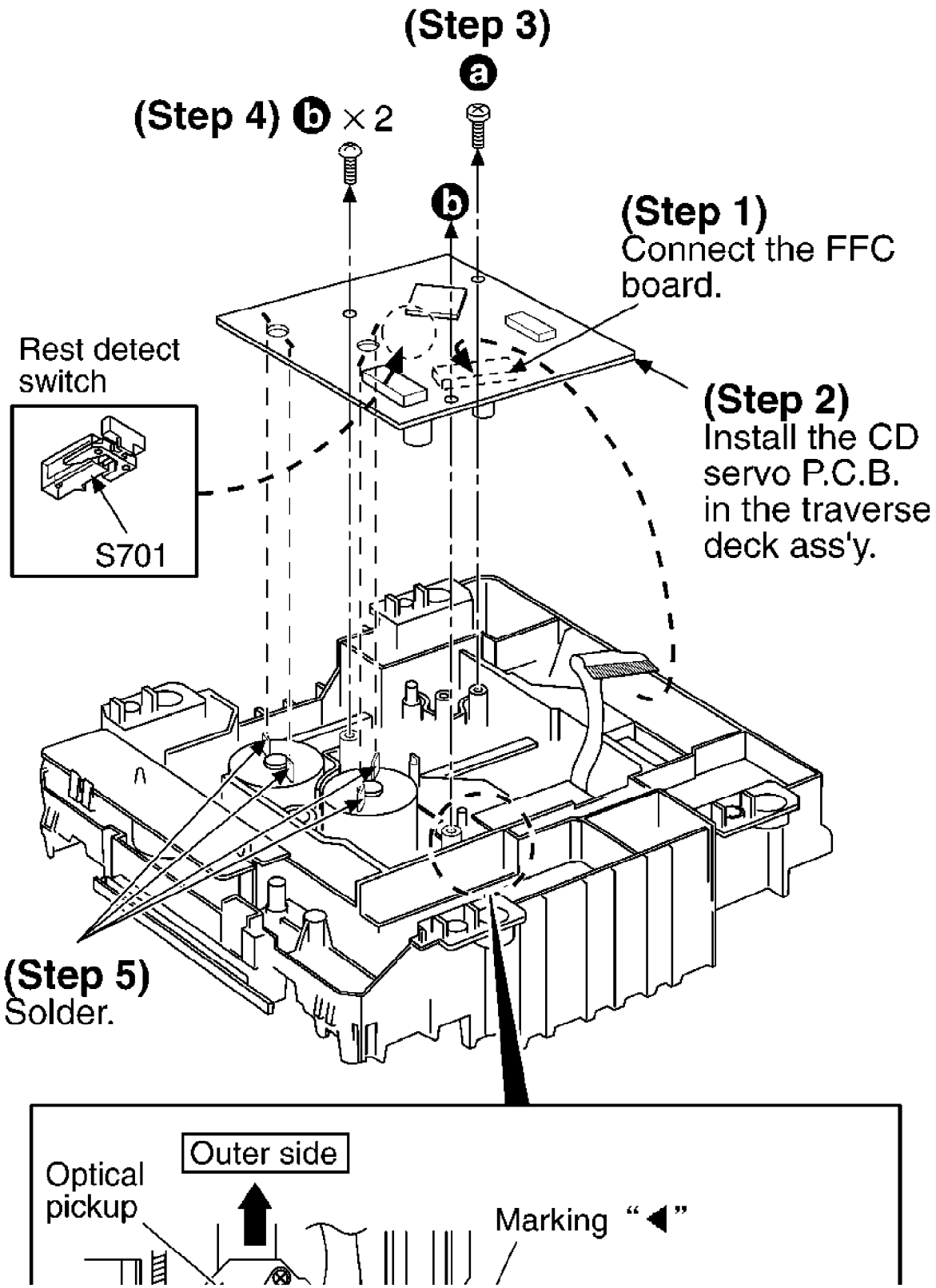
(Step 6)
Supporting the disc tray manually, engage the drive ruck ass'y with the gear and then slide to stop the disc tray.

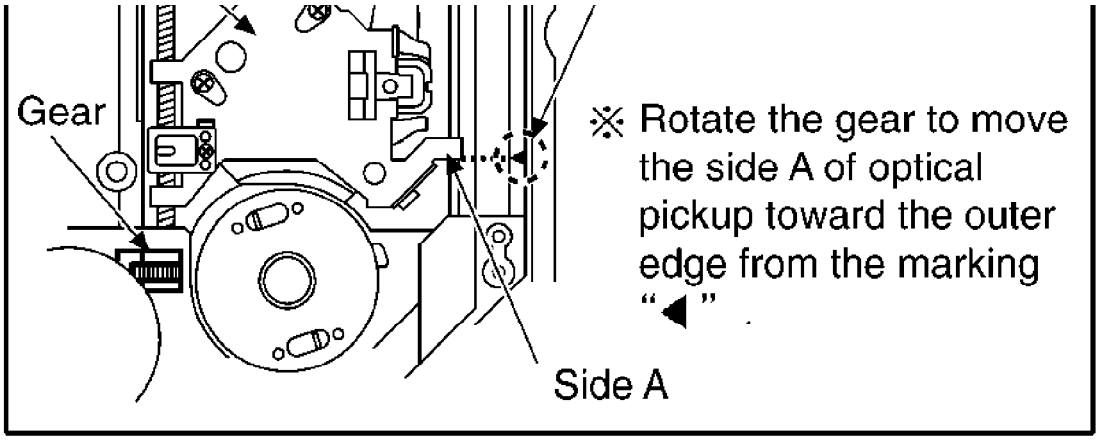
(Step 7)
Operate the conversion lever, and then locate the traverse deck to "DOWN" position.



(Step 8)
Press the disc tray.

Installation of the CD servo P.C.B. after replacement

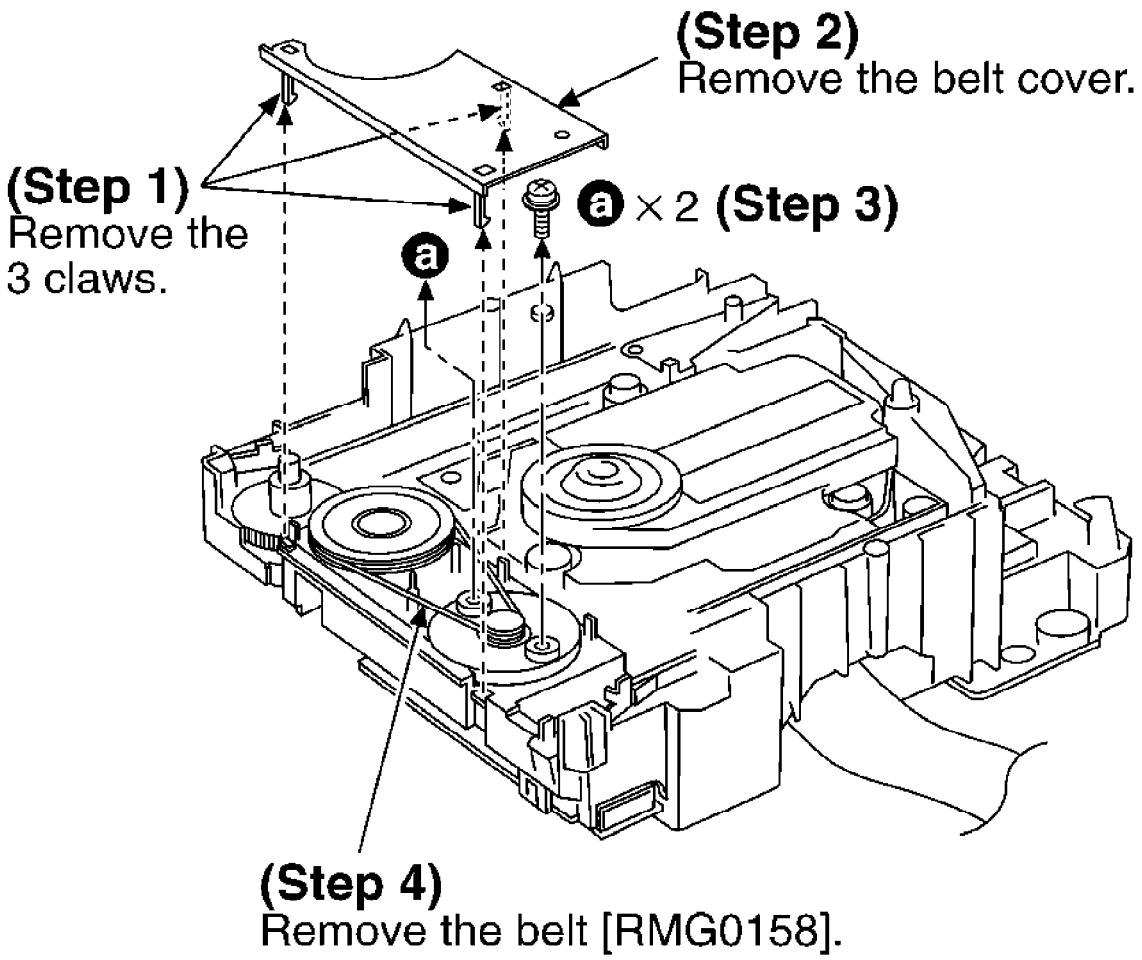


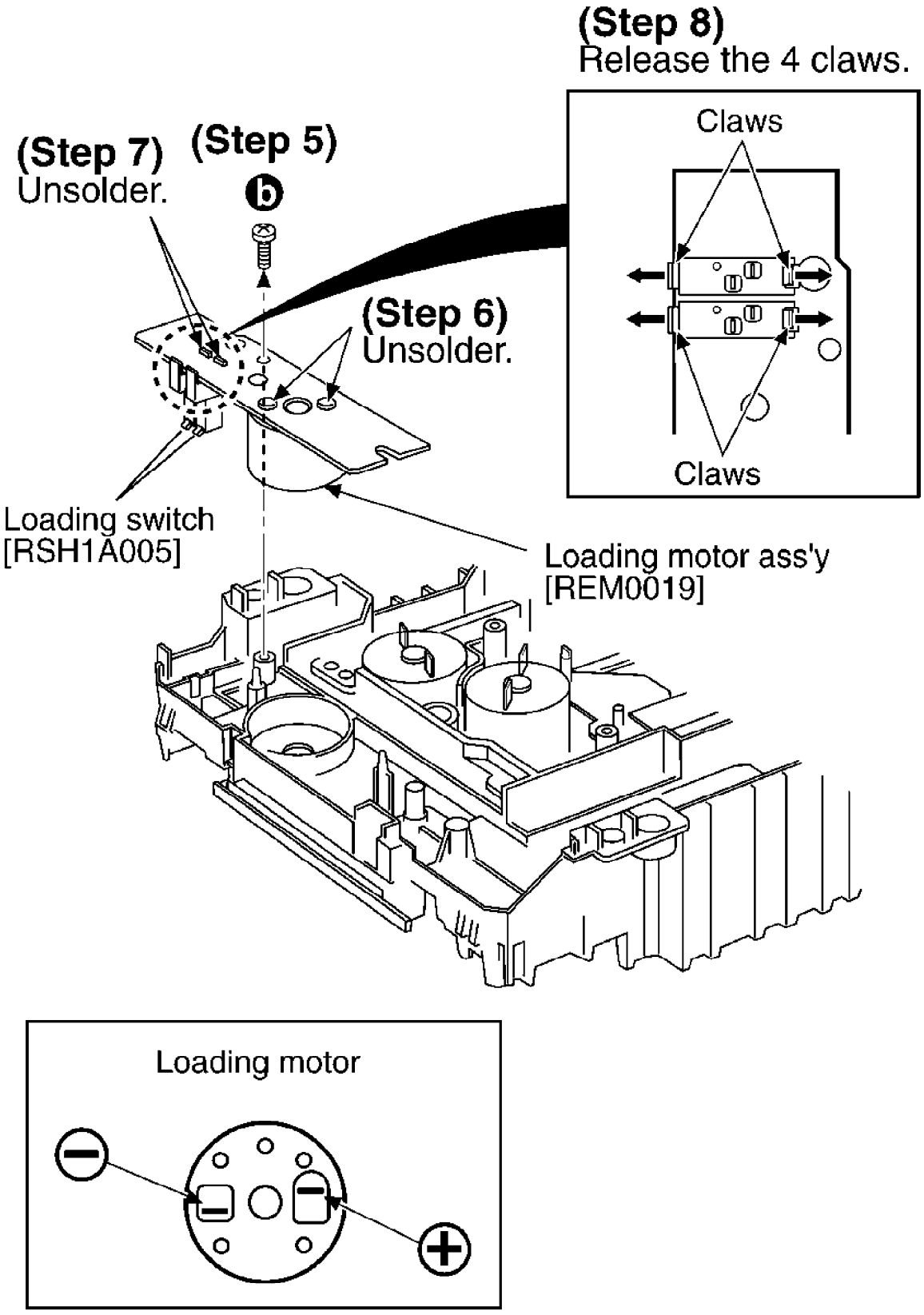


NOTE:
Before installing the CD servo P.C.B., move the optical pickup toward the outer edge from the mark "◀".
[Otherwise, the rest detect switch (S701) mounted on the CD servo P.C.B. may be damaged.]

6.4. Replacement for the belt, loading motor ass'y and loading switch

- **Follow the (Step 1) - (Step 3) of item 6.1.**
- **Follow the (Step 1) - (Step 5) of item 6.2.**
- **Follow the (Step 1) - (Step 9) of item 6.3.**


(Step 2)
Remove the belt cover.
(Step 1)
Remove the
3 claws.
ⓐ × 2 (Step 3)
ⓐ
(Step 4)
Remove the belt [RMG0158].


(Step 8)
Release the 4 claws.
Claws
Claws
(Step 7)
Unsolder.
(Step 5)
b
(Step 6)
Unsolder.
Loading switch
[RSH1A005]
Loading motor ass'y
[REM0019]

Loading motor

7. Error Code Display and Servo Adjustment Function

This unit has an error code display function, so that if the unit operates incorrectly, the fault is displayed using an error code on the FL display of the Tuner (ST-HD550). It also has a servo adjustment function for displaying the status of servosystem functions (Focus, Tracking, CLV servo) on the FL display of the tuner. The system control IC and FL display are part of the tuner so make sure the system has been connected properly before using these functions. Use these two functions for guidanceduring fault diagnosis and repair.

Note:

Check beforehand for scratching or soiling of the test disc (SZZP1054C), and soiling or other problems with the pickup lens.

7.1. Error code display procedure

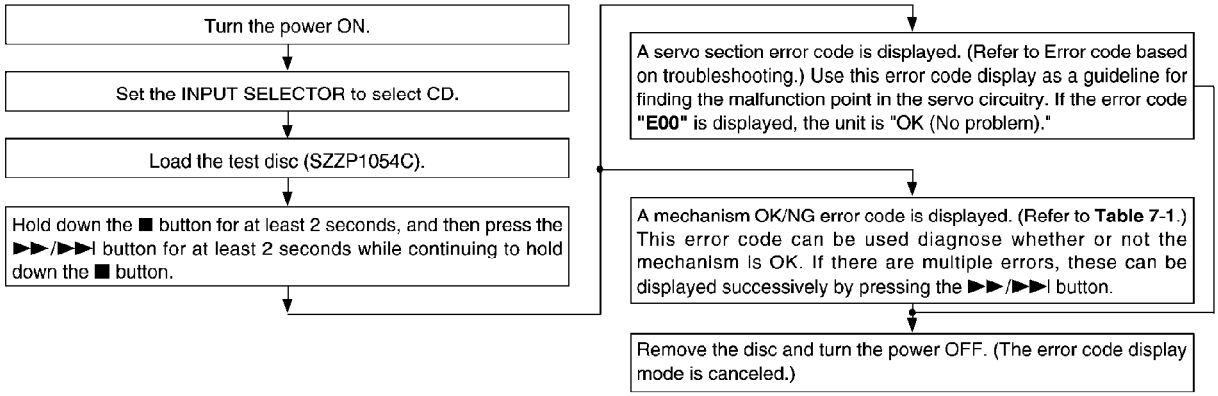
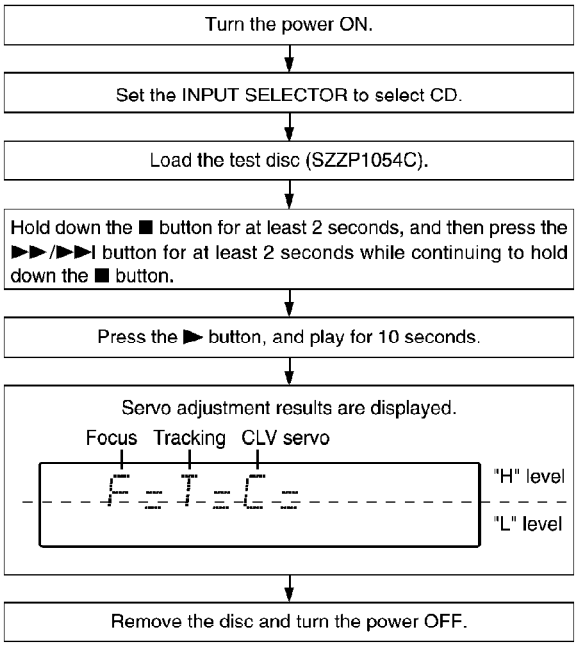

Turn the power ON.
Set the INPUT SELECTOR to select CD.
Load the test disc (SZZP1054C).
Hold down the ■ button for at least 2 seconds, and then press the ►►/►►I button for at least 2 seconds while continuing to hold down the ■ button.
A servo section error code is displayed. (Refer to Error code based on troubleshooting.) Use this error code display as a guideline for finding the malfunction point in the servo circuitry. If the error code "E00" is displayed, the unit is "OK (No problem)."
A mechanism OK/NG error code is displayed. (Refer to Table 7-1.) This error code can be used diagnose whether or not the mechanism is OK. If there are multiple errors, these can be displayed successively by pressing the ►►/►►I button.
Remove the disc and turn the power OFF. (The error code display mode is canceled.)

Table 7-1.

L display	Symptom	Cause
H15	When CD tray opens, it closes by itself.	Disc tray open detect switch (S790) fault.
H16	When CD tray closes, it opens by itself.	Disc tray close detect switch (S791) fault.
F15	Does not play, even when ► button is pressed.	Pickup rest detect switch (S701) fault.
F26	Does not move, even when ► button is pressed.	System control IC and servo processor IC (IC201, IC702) fault.

7.2. Servo adjustment procedure

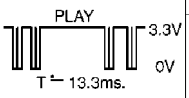
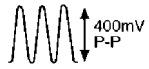
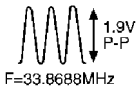
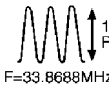
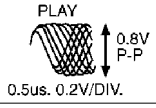

Turn the power ON.
Set the INPUT SELECTOR to select CD.
Load the test disc (SZZP1054C).
Hold down the ■ button for at least 2 seconds, and then press the ▶▶/▶▶I button for at least 2 seconds while continuing to hold down the ■ button.
Press the ▶ button, and play for 10 seconds.
Servo adjustment results are displayed.
Focus Tracking CLV servo
F_T_C-
"H" level
"L" level
Remove the disc and turn the power OFF.

(Example)

	"L" level	"H" level
Focus system	normal	defective
Tracking system	normal	defective
CLV servo system	defective	normal

7.3. Error code based on troubleshooting

- **This unit is satisfactory if the error code is E00 .**
- **Before testing, check that the test disc is free of scratches and optical pickup is clean.**

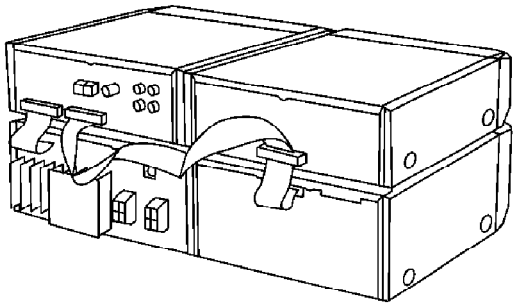
FL error code isplay	Symptom	Probable cause	Signal to check		Normal voltage and waveform values	
			Signal name	Location	PLAY	STOP
01	Focus and tracking offset adjustments not completed in the specified time period.	Clocks X1 IN and X2 OUT, power supply VDD and reset/ RST, all on IC702. MDATA, MCLK and MLD signals to/from IC201.	MDATA	IC702-pin 8		0 V
			MCLK	IC702-pin 7		3.3 V
			MLD	IC702-pin 9		3.3 V
			/RST	IC702-pin 18	3.3 V	3.3 V
			X1 IN	IC702-pin 58		
			X2 OUT	IC702-pin 59		
02, 04, 06, 0A, 0C, 0E	Disc play unstable.	Scratches or contaminants on disc surface. Focus and Tracking servo circuits. (check waveforms, voltages and part values.) Spindle driver circuit. Optical pickup.	FE	IC702-pin 32		1.7 V
			TE	IC702-pin 33		1.7 V
			FOD	IC702-pin 28	1.7 V	1.7 V
			TRD	IC702-pin 27	1.7 V	1.7 V
			/RFDET	IC702-pin 38	0 V	3.3 V
			RF	TJ701		1.0 V
			STAT	IC702-pin 17	3.3 V	0 V
			FBAL	IC702-pin 30	1.7 V	1.7 V

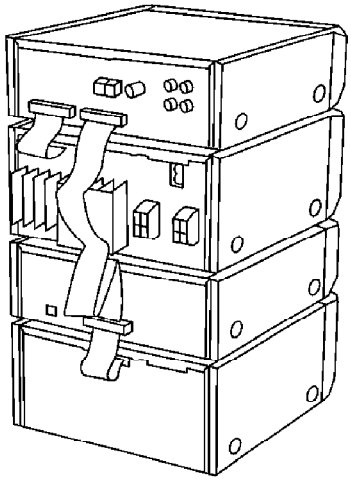
08, 0A	Focus or Tracking gain adjustments not completed in specified time period.	Scratches or contaminants on disc surface. Focus and Tracking servo circuit. (check waveforms, voltages and part values.) Optical pickup.	FE	IC702-pin 32		1.7 V
			TE	IC702-pin 33		1.7 V
			OFT	IC702-pin 36	0 V	0 V

8. To Supply Power Source

This unit is designed to operate on power supplied from system connected. When a component requires service, use the system connections to supply power source.
For system connections, refer to Fig.8-1.

Fig. 8-1.





9. Schematic Diagram Notes

- **This schematic diagram may be modified at any time with the development of new technology.**

Notes:

S701:

Rest detect switch in OFF position

S790:

Disc Tray open detect switch in OFF position

S791:

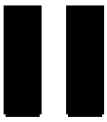
Disc Tray close detect switch in OFF position

S801:

Disc tray open/close switch

(**OPEN/CLOSE)**

S802:

Pause switch ( **)**

S803:

F.Skip/search switch (**)**

S804:

Play switch (**)**

S805:

Stop switch (**)**

S806:

R.Skip/search switch (**)**

S807:

CD edit switch (EDIT)

S808:

Repeat switch (REPEAT)

S809:

Random play switch (RANDOM)

- **Indicated voltage values are the standard values for the unit measured by the**

DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on theinternal impedance of the DC circuit tester.

No mark

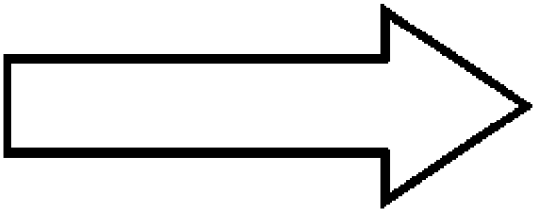
: CD Stop

( )

: CD Play [1 kHz, L+R, 0 dB]

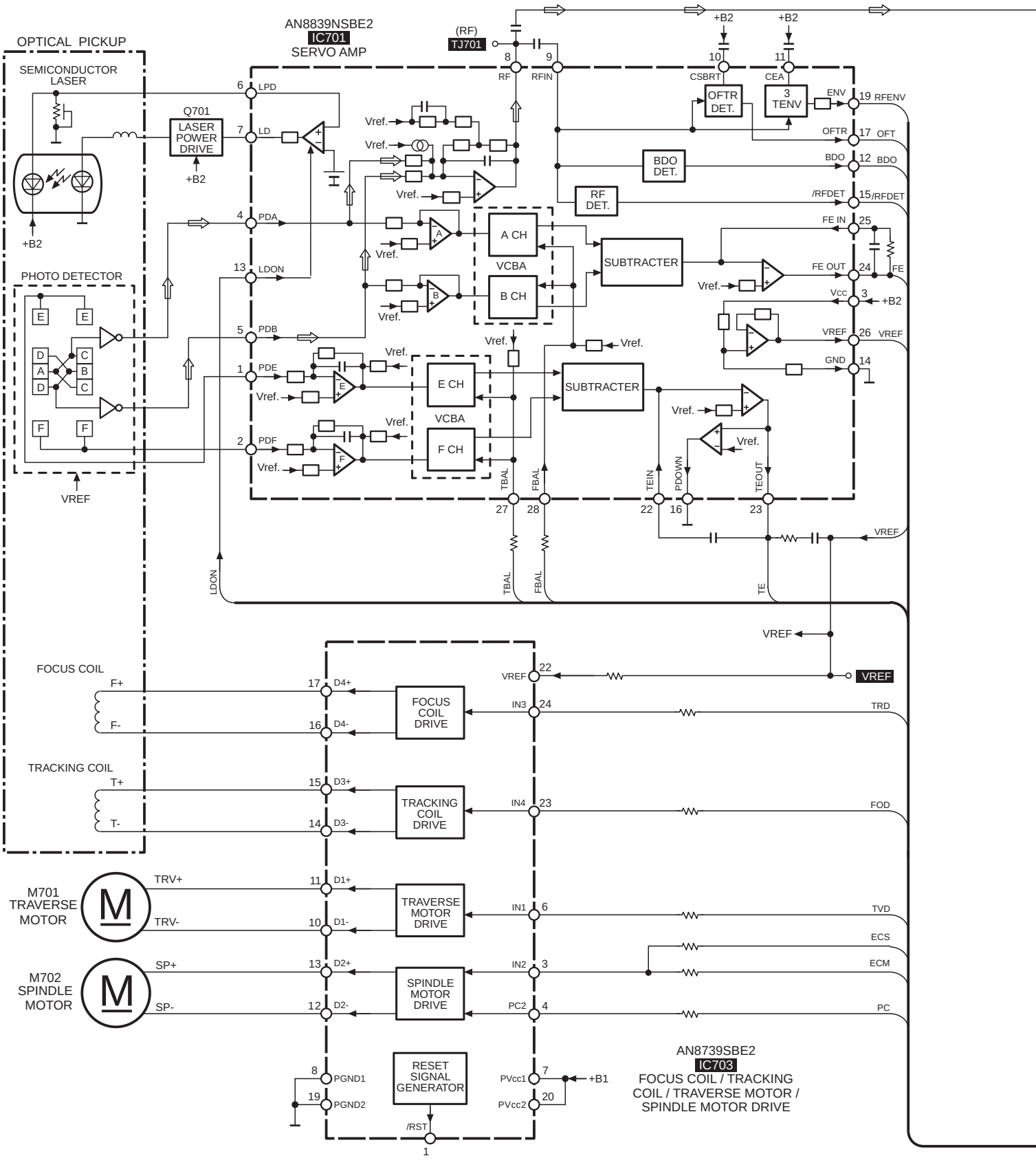
- **Important safety notice:**
  Components identified by ⚠ mark have special characteristics important for safety.
  Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
  When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
- **The supply part number is described alone in the replacement parts list.**
- **Caution!**
  IC and LSI are sensitive to static electricity.
  Secondary trouble can be prevented by taking care during repair.
  Cover the parts boxes made of plastics with aluminum foil.
  Ground the soldering iron.
  Put a conductive mat on the work table.
  Do not touch the legs of IC or LSI with the fingers directly.
- **Voltage and signal line**

: Positive voltage line



: CD signal line

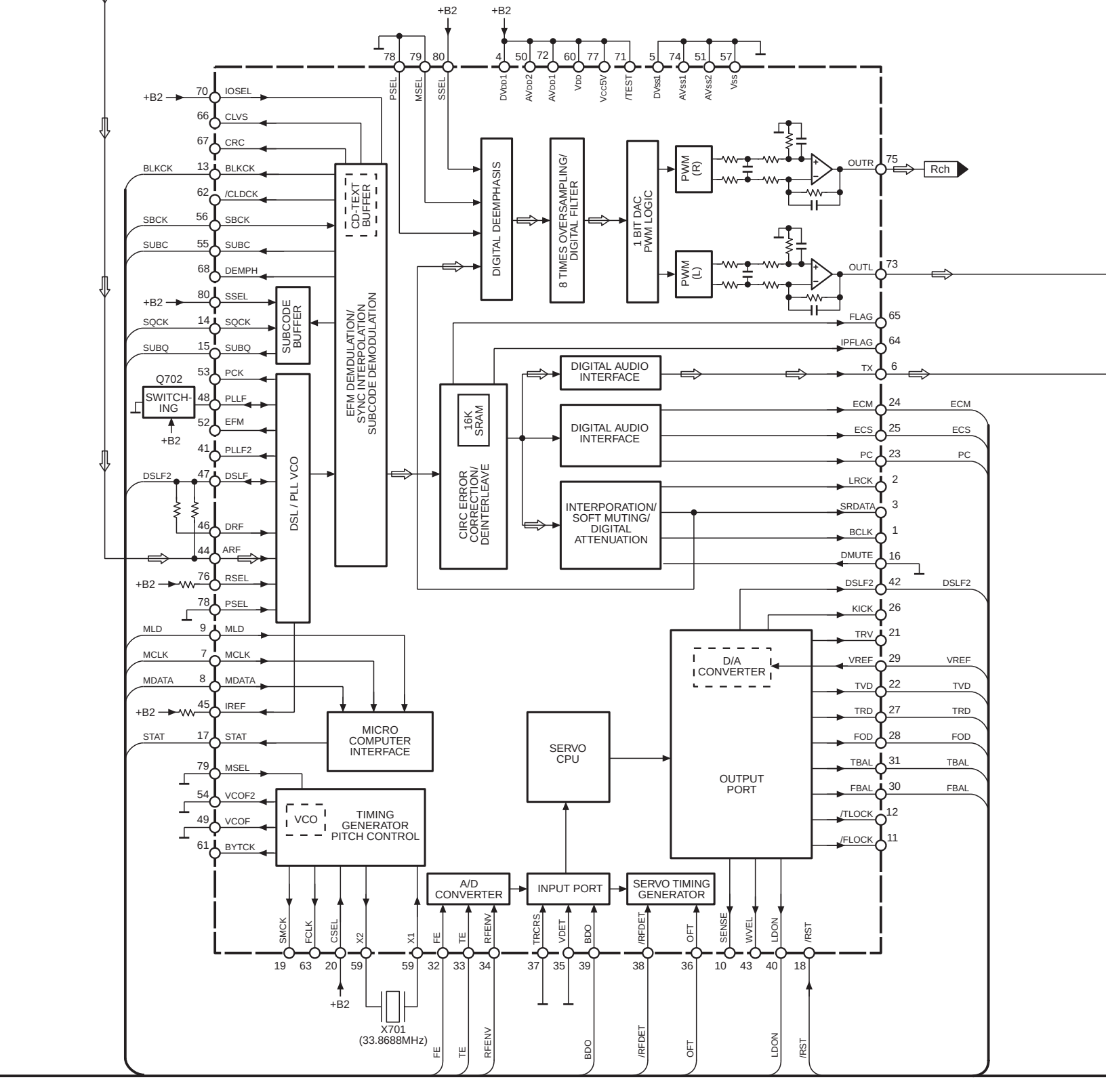
10. Schematic Diagram

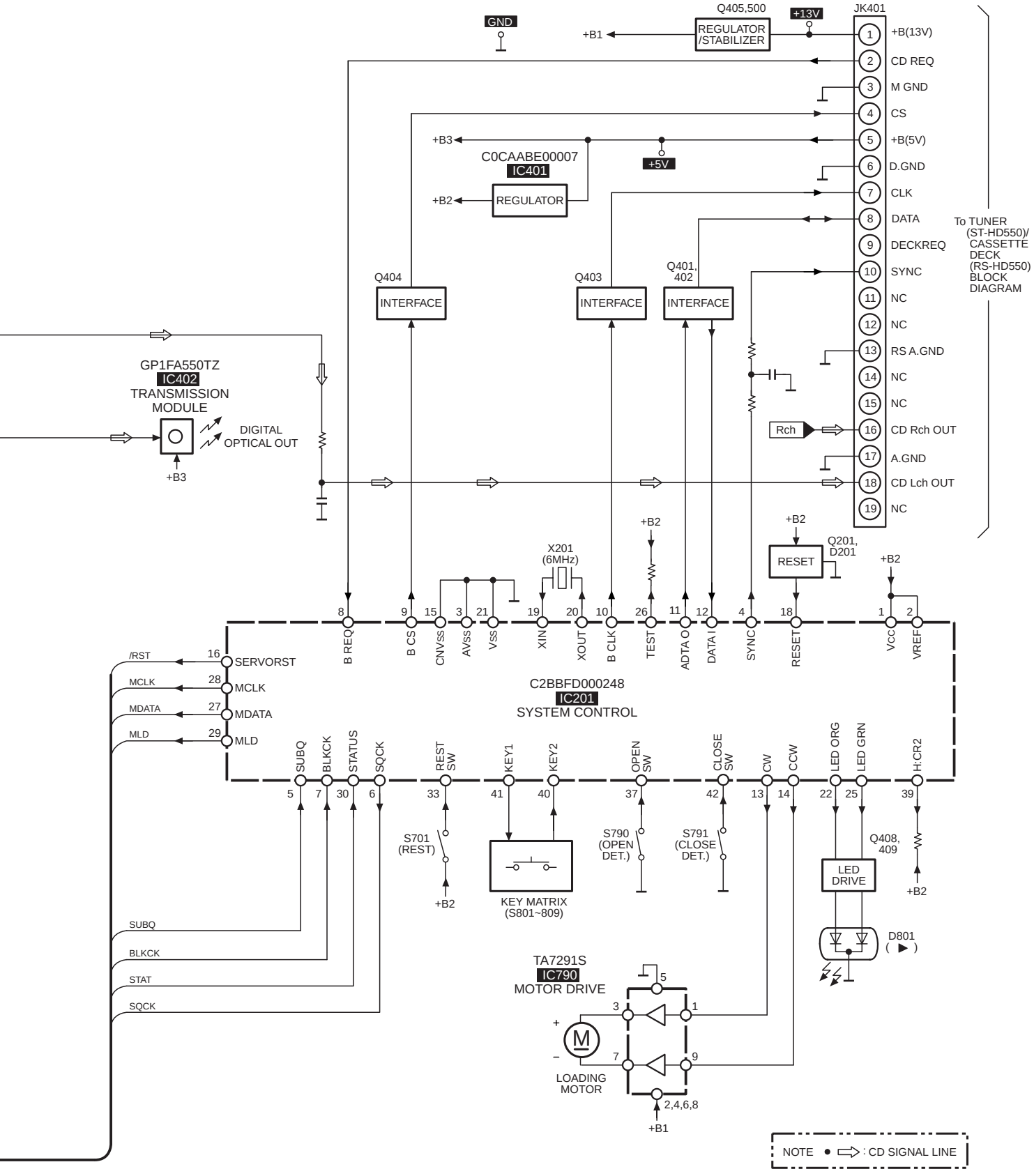

OPTICAL PICKUP
SEMICONDUCTOR LASER
+B2
PHOTO DETECTOR
VREF
AN8839NSBE2
IC701
SERVO AMP
(RF)
TJ701
Q701
LASER POWER DRIVE
+B2
LPD
LD
PDA
LDON
PDB
PDE
PDF
Vref.
A CH
B CH
VCBA
E CH
F CH
SUBTRACTER
SUBTRACTER
RF
RFIN
CSBRT
CEA
OFTR DET.
3 TENV
ENV
RFENV
OFTR
OFT
BDO DET.
BDO
RF DET.
/RFDET
FE IN
FE OUT
FE
Vcc
+B2
VREF
GND
TBAL
FBAL
TEIN
PDOWN
TEOUT
TE
LDON
VREF
FOCUS COIL
F+
F-
FOCUS COIL DRIVE
TRD
TRACKING COIL
T+
T-
TRACKING COIL DRIVE
FOD
M701 TRAVERSE MOTOR
TRV+
TRV-
TRAVERSE MOTOR DRIVE
TVD
M702 SPINDLE MOTOR
SP+
SP-
SPINDLE MOTOR DRIVE
ECS
ECM
PC
RESET SIGNAL GENERATOR
PGND1
PGND2
/RST
PVcc1
PVcc2
+B1
AN8739SBE2
IC703
FOCUS COIL / TRACKING COIL / TRAVERSE MOTOR / SPINDLE MOTOR DRIVE

MN662790RSC

IC702

SERVO PROCESSOR / DIGITAL SIGNAL PROCESSOR
DIGITAL FILTER / D/A CONVERTER




Q405,500
REGULATOR /STABILIZER
+13V
JK401
GND
+B1
1 +B(13V)
2 CD REQ
3 M GND
4 CS
5 +B(5V)
6 D.GND
7 CLK
8 DATA
9 DECKREQ
10 SYNC
11 NC
12 NC
13 RS A.GND
14 NC
15 NC
16 CD Rch OUT
17 A.GND
18 CD Lch OUT
19 NC
To TUNER (ST-HD550)/ CASSETTE DECK (RS-HD550) BLOCK DIAGRAM
+B3
C0CAABE00007
IC401
REGULATOR
+B2
+5V
Q404
INTERFACE
Q403
INTERFACE
Q401, 402
INTERFACE
GP1FA550TZ
IC402
TRANSMISSION MODULE
DIGITAL OPTICAL OUT
+B3
Rch
X201 (6MHz)
+B2
RESET
Q201, D201
+B2
8 B REQ
9 B CS
15 CNVss
3 AVss
21 Vss
19 XIN
20 XOUT
10 B CLK
26 TEST
11 ADTA O
12 DATA I
4 SYNC
18 RESET
1 Vcc
2 VREF
C2BBFD000248
IC201
SYSTEM CONTROL
16 SERVORST
/RST
28 MCLK
MCLK
27 MDATA
MDATA
29 MLD
MLD
5 SUBQ
7 BLKCK
30 STATUS
6 SQCK
33 REST SW
41 KEY1
40 KEY2
37 OPEN SW
42 CLOSE SW
13 CW
14 CCW
22 LED ORG
25 LED GRN
39 H:CR2
S701 (REST)
+B2
KEY MATRIX (S801~809)
S790 (OPEN DET.)
S791 (CLOSE DET.)
Q408, 409
LED DRIVE
+B2
D801
SUBQ
BLKCK
STAT
SQCK
TA7291S
IC790
MOTOR DRIVE
5
3
1
7
9
LOADING MOTOR
2,4,6,8
+B1
NOTE ● ⇨ : CD SIGNAL LINE

SCHEMATIC DIAGRAM-1

NOTE:
The number which noted at the connectors on the schematic diagram as "SCHEMATIC DIAGRAM-1" or "SCHEMATIC DIAGRAM-2" indicates the schematic diagram serial number located on the left corner in the schematic diagram.

A CD SERVO CIRCUIT

:POSITIVE VOLTAGE LINE :CD SIGNAL LINE

⚠ OPTICAL PICKUP

Q701
2SB709STX
LASER POWER DRIVE

IC701
AN8839NSBE2
SERVO AMP

IC703
AN8739SBE2
FOCUS COIL/
TRACKING COIL/
TRAVERSE MOTOR/
SPINDLE MOTOR DRIVE

CN701

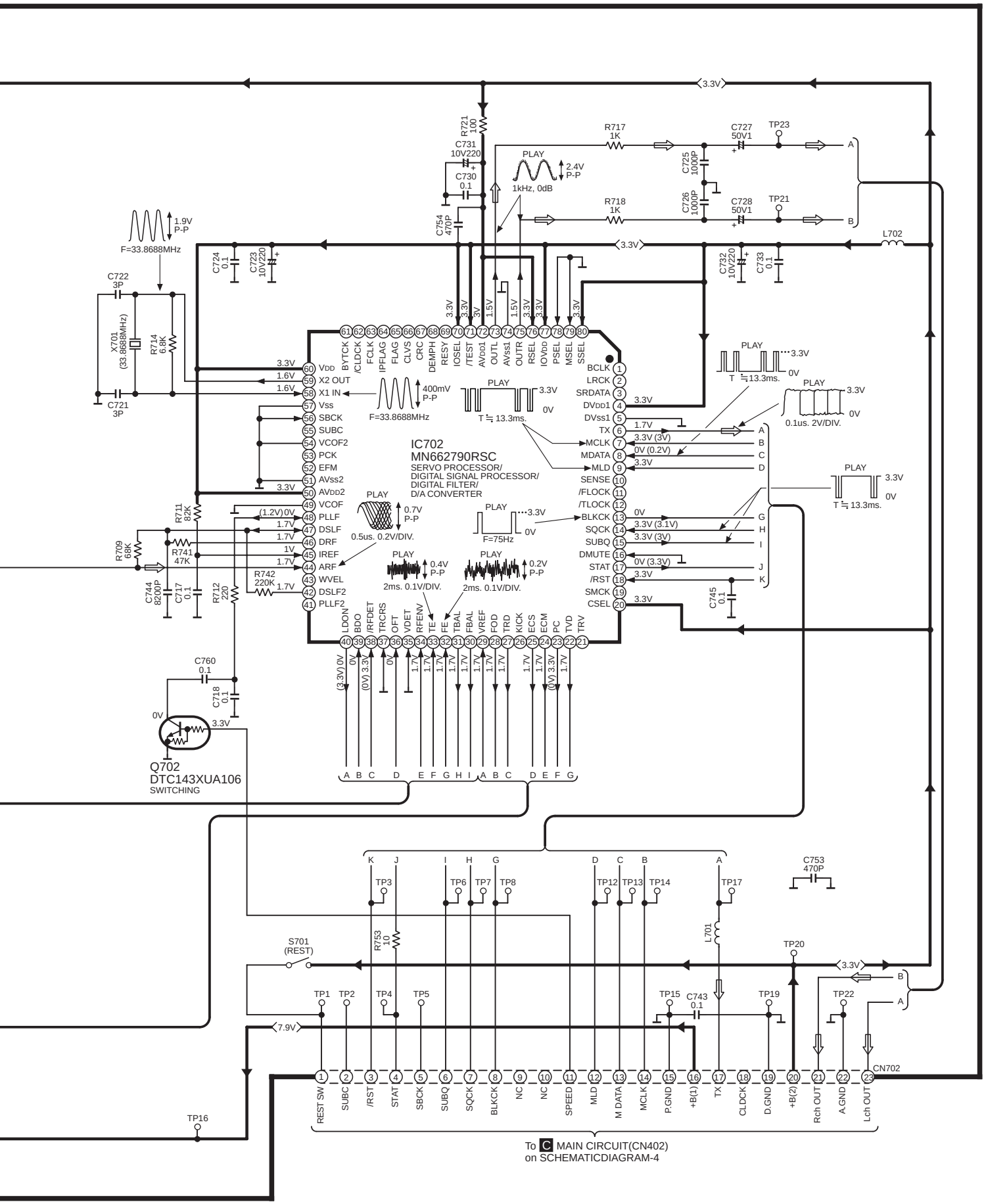
TRACKING COIL

FOCUS COIL

M702 SPINDLE MOTOR

M701 TRAVERSE MOTOR

SCHEMATIC DIAGRAM-2



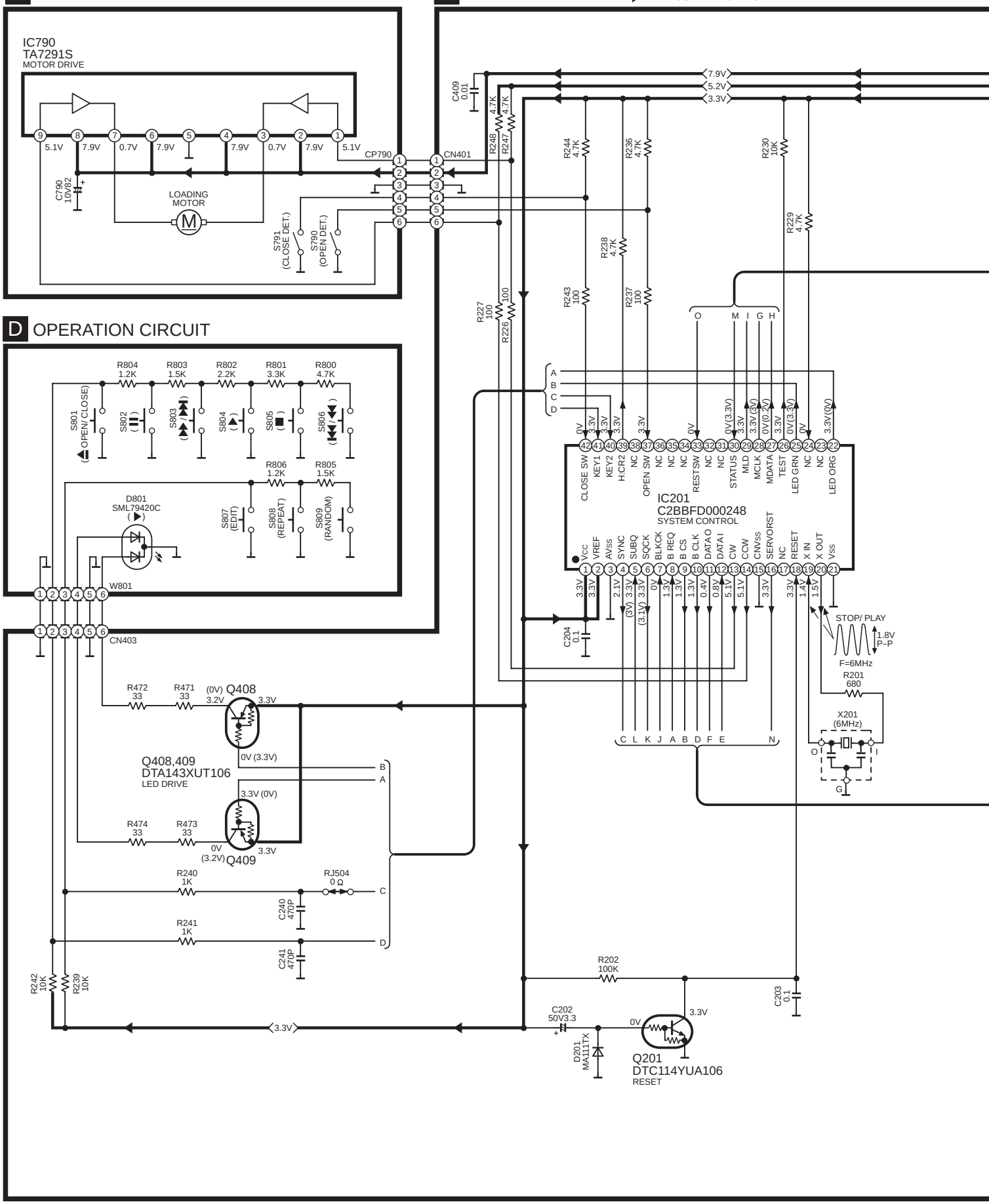
SCHEMATIC DIAGRAM–3

B LOADING MOTOR CIRCUIT

C MAIN CIRCUIT

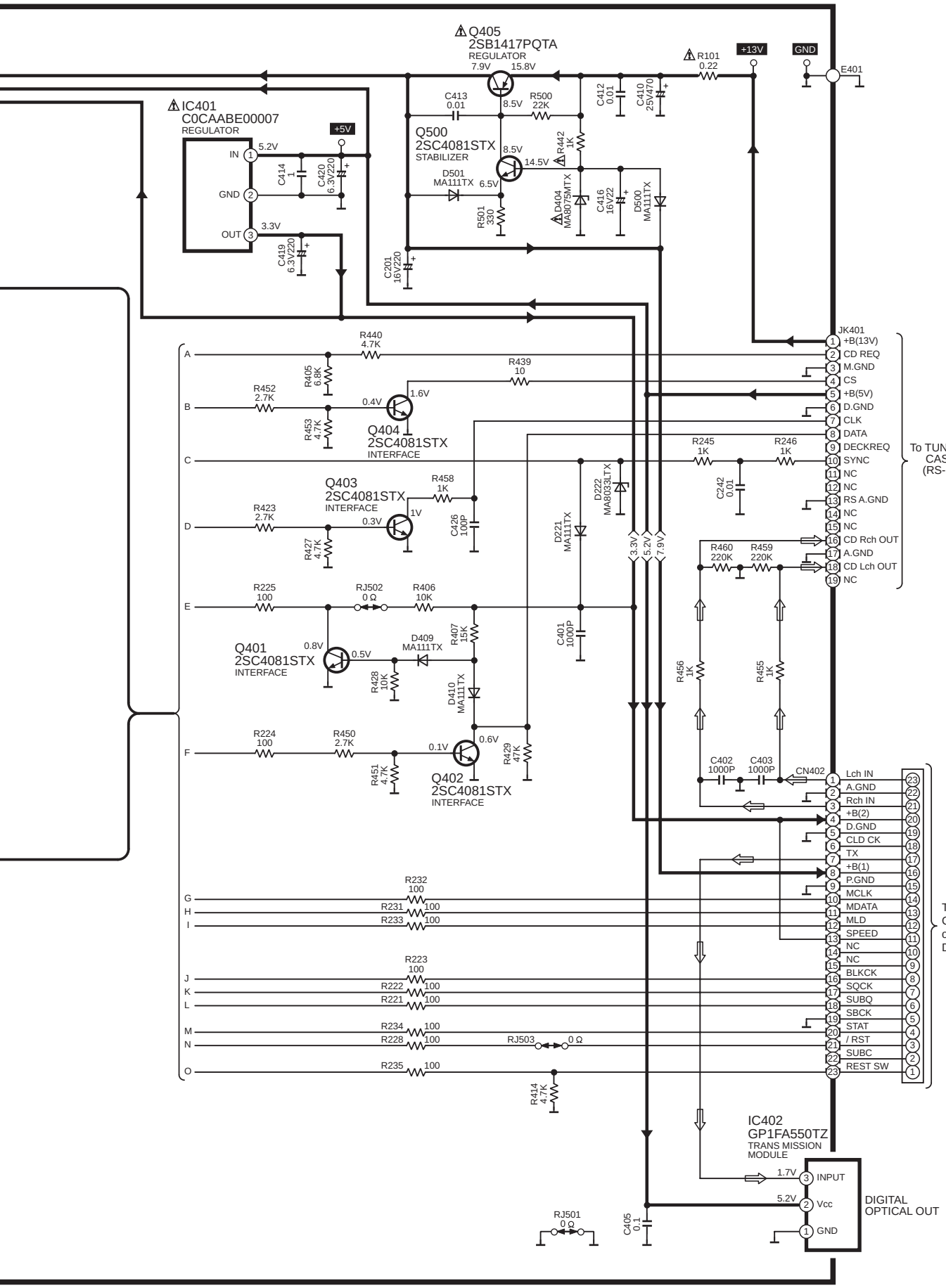
:POSITIVE VOLTAGE LINE

D OPERATION CIRCUIT

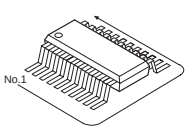


SCHEMATIC DIAGRAM–4

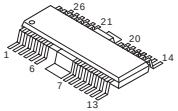
:POSITIVE VOLTAGE LINE :CD SIGNAL LINE



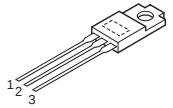
AN8839NSBE2	28PIN
C2BBFD000248	42PIN



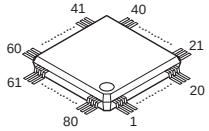
AN8739SBE2



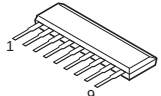
C0CAABE00007



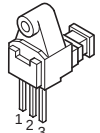
MN662790RSC



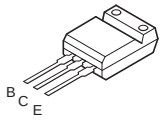
TA7291S

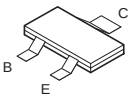


GP1FA550TZ



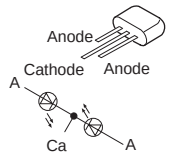
2SB1417PQTA



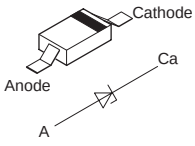


2SB709STX
2SC4081STX
DTA143XUT106
DTC114YUA106
DTC143XUA106

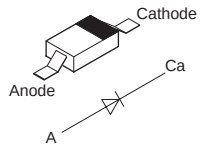
SML79420C



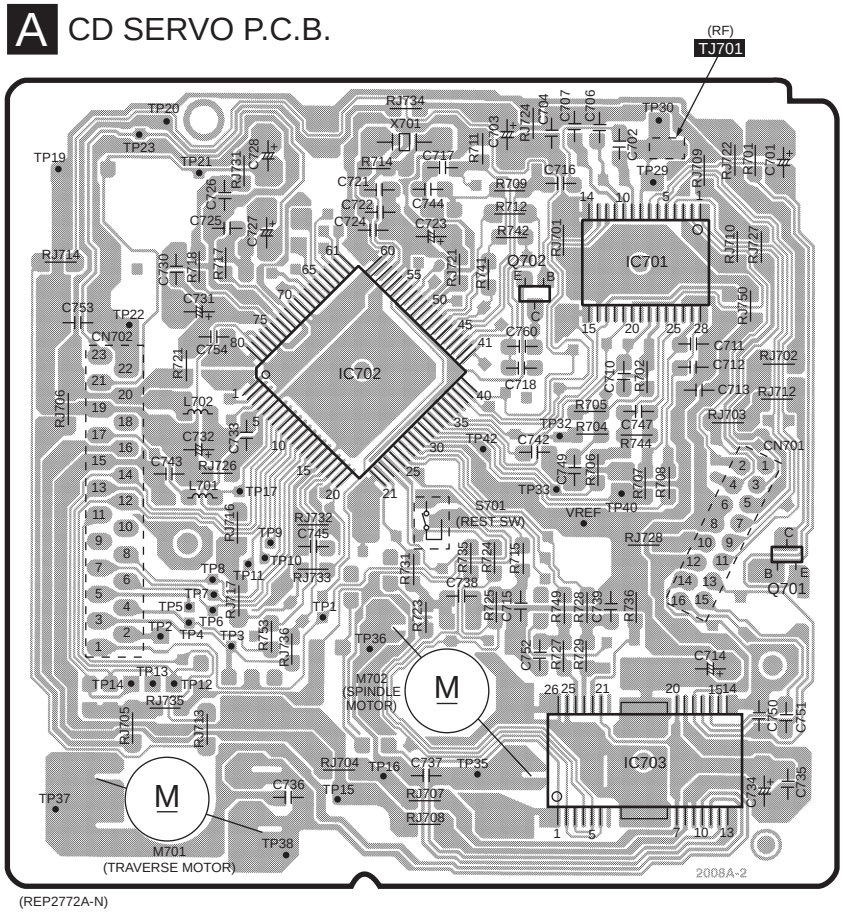
MA8075MTX
MA8033LTX



MA111TX

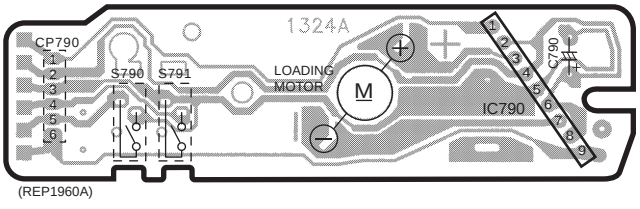


A CD SERVO P.C.B.

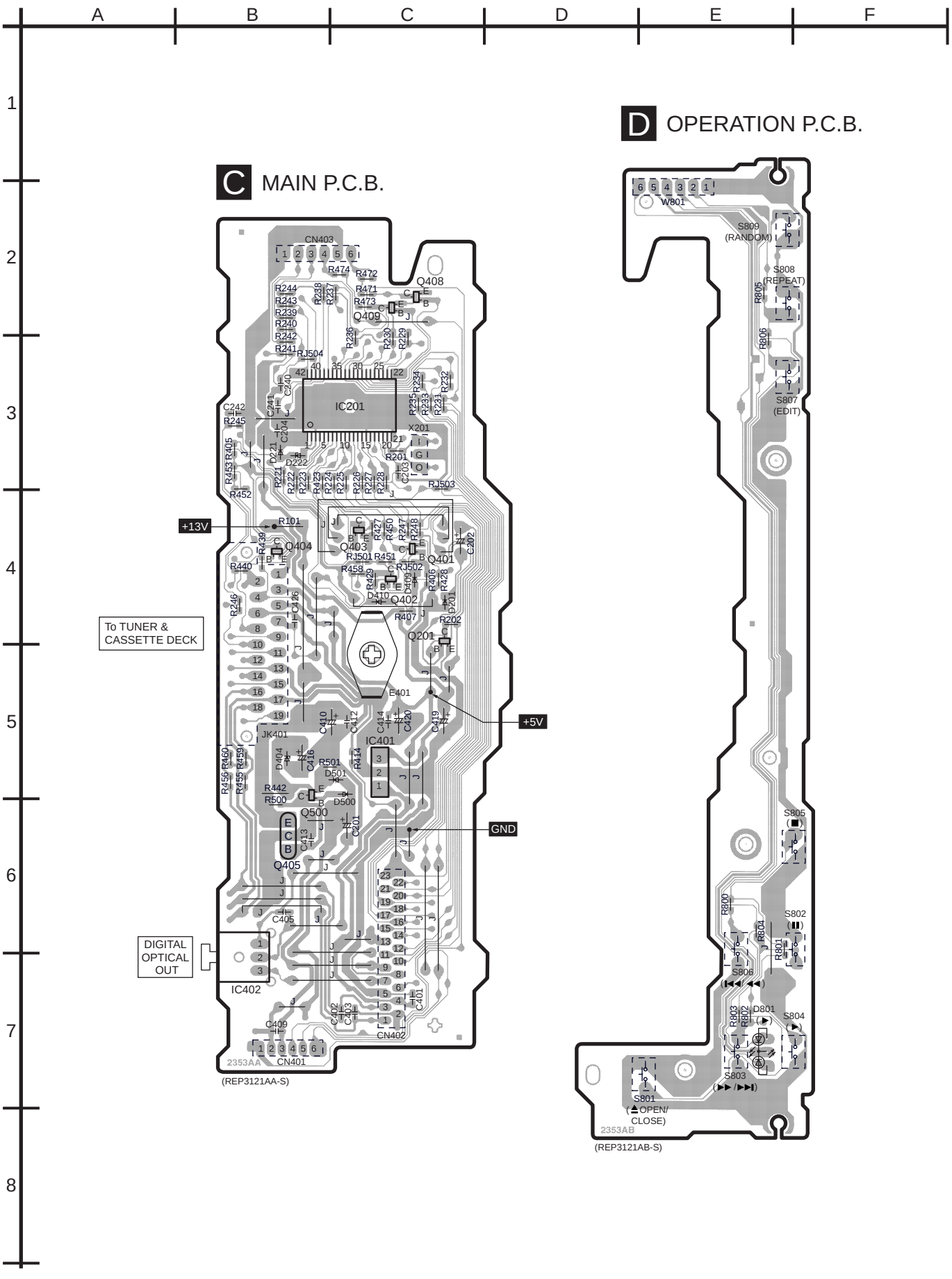


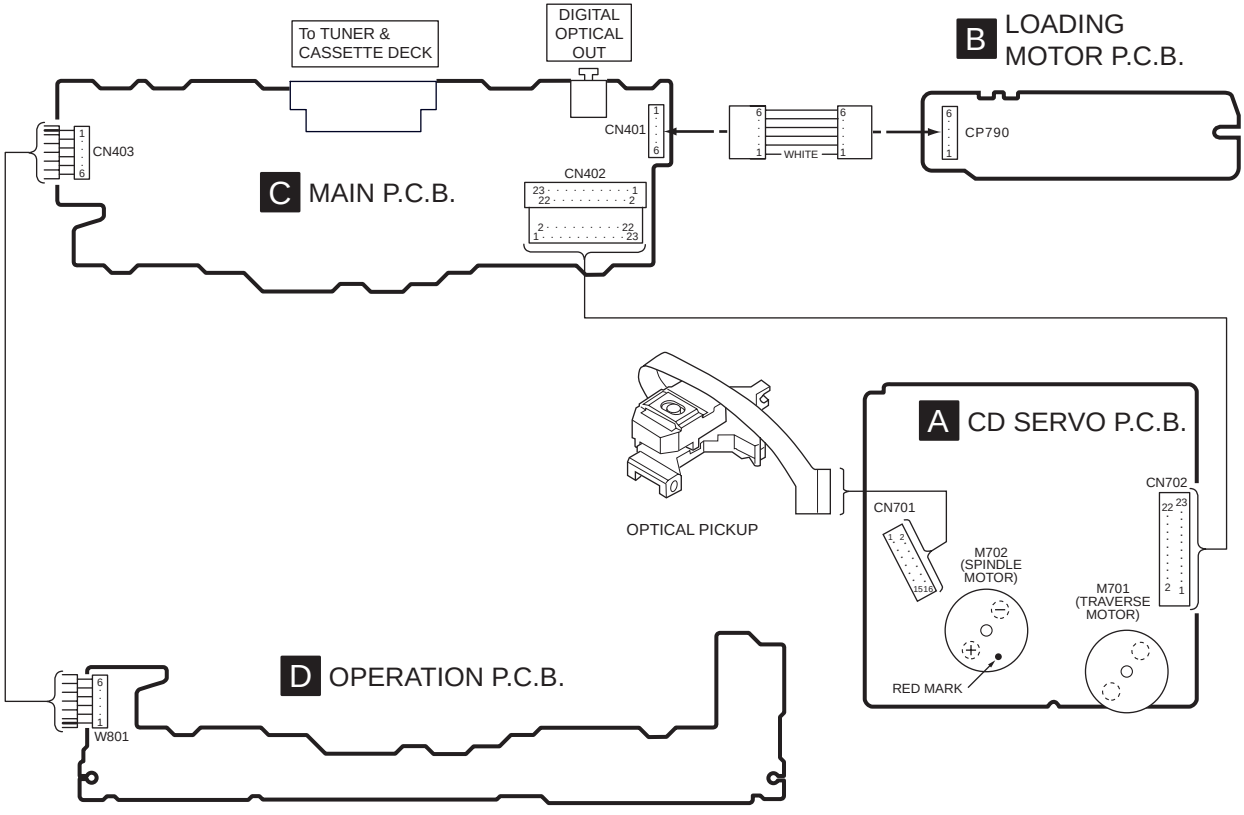
(REP2772A-N)

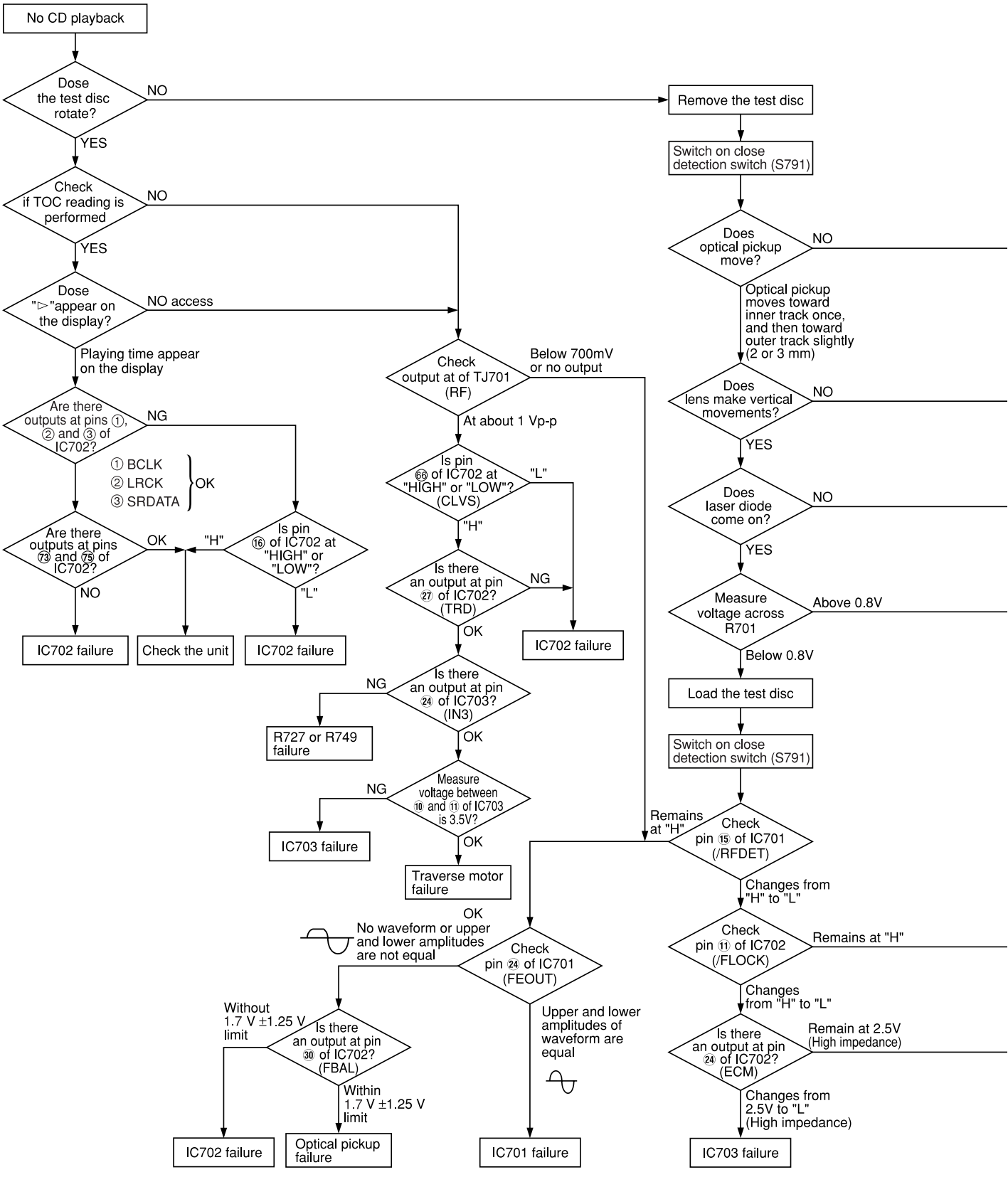
B LOADING MOTOR P.C.B.

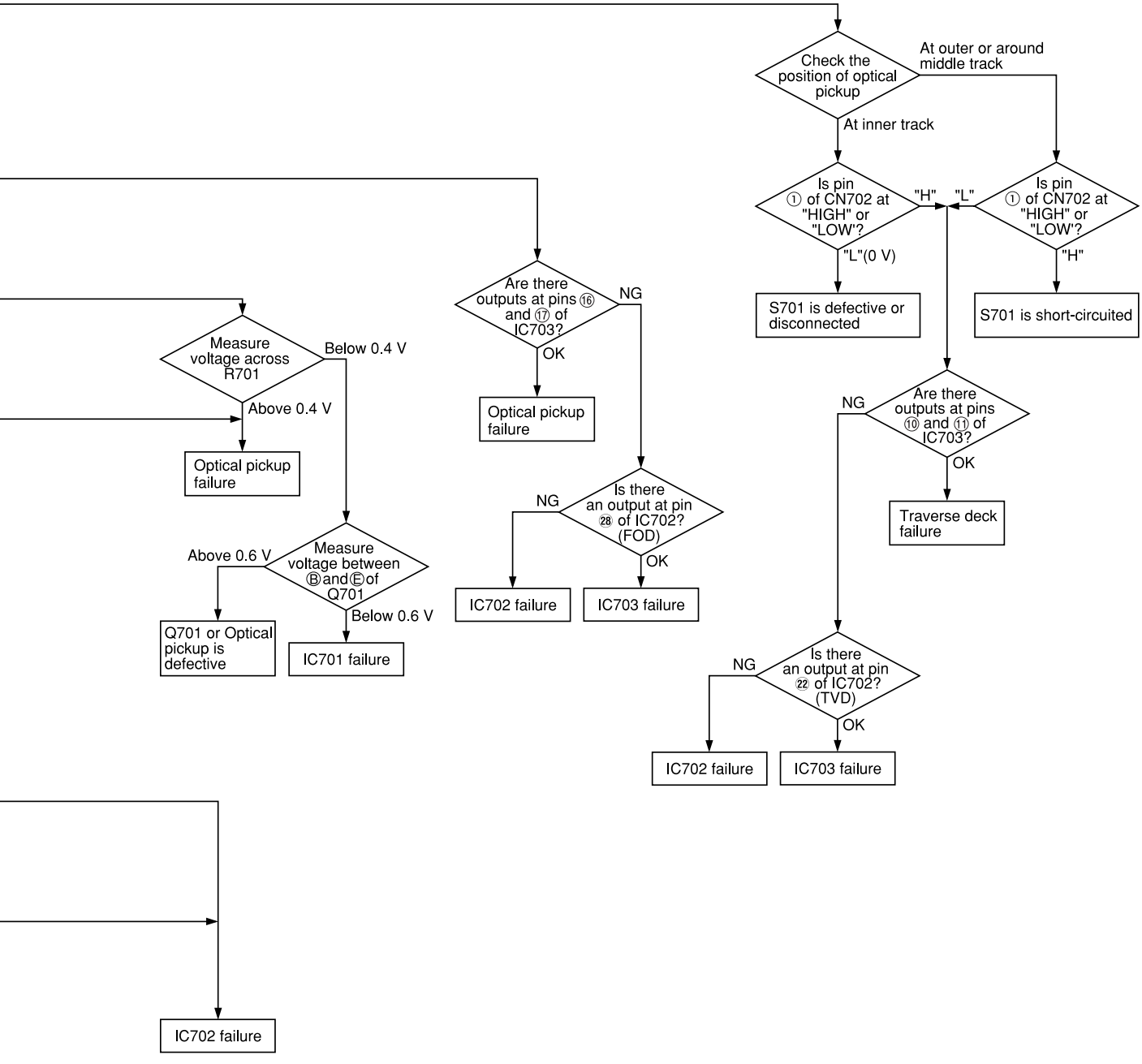


(REP1960A)


A
B
C
D
E
F
1
2
3
4
5
6
7
8
C MAIN P.C.B.
D OPERATION P.C.B.
CN403
IC201
X201
RJ504
RJ503
RJ501
RJ502
Q408
Q409
Q404
Q403
Q401
Q402
Q201
Q500
Q405
IC401
IC402
E401
JK401
D501
D500
D410
D409
D404
D221
D222
+13V
+5V
GND
To TUNER & CASSETTE DECK
DIGITAL OPTICAL OUT
CN401
CN402
2353AA
(REP3121AA-S)
W801
S809 (RANDOM)
S808 (REPEAT)
S807 (EDIT)
S805
S802
S806
S804
S803
S801 (OPEN/ CLOSE)
D801
2353AB
(REP3121AB-S)


To TUNER & CASSETTE DECK
DIGITAL OPTICAL OUT
B LOADING MOTOR P.C.B.
CN403
CN401
CN402
WHITE
CP790
C MAIN P.C.B.
OPTICAL PICKUP
A CD SERVO P.C.B.
CN701
CN702
M702 (SPINDLE MOTOR)
M701 (TRAVERSE MOTOR)
RED MARK
D OPERATION P.C.B.
W801


No CD playback
Dose the test disc rotate?
NO
YES
Check if TOC reading is performed
NO
YES
Dose "▷"appear on the display?
NO access
Playing time appear on the display
Are there outputs at pins ①, ② and ③ of IC702?
NG
① BCLK
② LRCK
③ SRDATA
OK
Are there outputs at pins ⑬ and ⑮ of IC702?
OK
"H"
Is pin ⑯ of IC702 at "HIGH" or "LOW"?
"L"
NO
IC702 failure
Check the unit
IC702 failure
Check output at of TJ701 (RF)
Below 700mV or no output
At about 1 Vp-p
Is pin ⑯ of IC702 at "HIGH" or "LOW"? (CLVS)
"L"
"H"
Is there an output at pin ㉗ of IC702? (TRD)
NG
OK
IC702 failure
Is there an output at pin ㉔ of IC703? (IN3)
NG
OK
R727 or R749 failure
Measure voltage between ⑩ and ⑪ of IC703 is 3.5V?
NG
OK
IC703 failure
Traverse motor failure
Remove the test disc
Switch on close detection switch (S791)
Does optical pickup move?
NO
Optical pickup moves toward inner track once, and then toward outer track slightly (2 or 3 mm)
Does lens make vertical movements?
NO
YES
Does laser diode come on?
NO
YES
Measure voltage across R701
Above 0.8V
Below 0.8V
Load the test disc
Switch on close detection switch (S791)
Check pin ⑮ of IC701 (/RFDET)
Remains at "H"
Changes from "H" to "L"
Check pin ⑪ of IC702 (/FLOCK)
Remains at "H"
Changes from "H" to "L"
Is there an output at pin ㉔ of IC702? (ECM)
Remain at 2.5V (High impedance)
Changes from 2.5V to "L" (High impedance)
IC703 failure
OK
No waveform or upper and lower amplitudes are not equal
Check pin ㉔ of IC701 (FEOUT)
Upper and lower amplitudes of waveform are equal
IC701 failure
Without 1.7 V ±1.25 V limit
Is there an output at pin ㉚ of IC702? (FBAL)
Within 1.7 V ±1.25 V limit
IC702 failure
Optical pickup failure


Check the position of optical pickup
At outer or around middle track
At inner track
Is pin ① of CN702 at "HIGH" or "LOW"?
"H"
"L"
Is pin ① of CN702 at "HIGH" or "LOW"?
"L"(0 V)
"H"
S701 is defective or disconnected
S701 is short-circuited
Are there outputs at pins ⑯ and ⑰ of IC703?
NG
OK
Optical pickup failure
Measure voltage across R701
Below 0.4 V
Above 0.4 V
Optical pickup failure
Is there an output at pin ㉘ of IC702? (FOD)
NG
OK
IC702 failure
IC703 failure
Measure voltage between Ⓑ and Ⓔ of Q701
Above 0.6 V
Below 0.6 V
Q701 or Optical pickup is defective
IC701 failure
Are there outputs at pins ⑩ and ⑪ of IC703?
NG
OK
Traverse deck failure
Is there an output at pin ㉒ of IC702? (TVD)
NG
OK
IC702 failure
IC703 failure
IC702 failure

11. Printed Circuit Board Diagram

12. Type Illustration of ICs, Transistors and Diodes

13. Wiring Connection Diagram

14. Block Diagram

15. Troubleshooting Guide

16. Terminal Function of ICs

16.1. IC201 (C2BBFD000248): System Control

Pin No.	Terminal Name	I/O	Function
1	Vcc	I	Power supply terminal
2	VREF	I	Reference voltage input
3	AVSS	-	GND terminal
4	SYNC	I	Power failure detect signal input
5	SUBQ	I	Sub-code Q data signal input
6	SQCK	O	Sub-code Q resistor clock signal output
7	BLKCK	I	Sub code block clock signal input
8	B REQ	I	Serial communication request signal input from FL display/ System control IC
9	B CS	O	Serial communication CS signal output for FL display/System control IC
10	B CLK	O	Serial communication clock signal output for FL display/ System control IC
11	DATA O	O	Serial communication data signal output for FL display/ System control IC
12	DATA I	I	Serial communication data signal input from FL display/ System control IC
13	CW	O	Loading motor control signal (OPEN) output
14	CCW	O	Loading motor control signal (CLOSE) output
15	CNVSS	-	GND terminal
16	SERVO RST	O	Reset signal output
17	NC	-	Not used, open
18	RESET	I	Reset signal input
19	X IN	I	Oscillator connected terminal (F =6 MHz)
20	X OUT	O	
21	VSS	-	GND terminal
22	LED ORG	O	LED (orange) control signal output
23	NC	-	Not used, open
24			
25	LED GRN	O	LED (green) control signal output
26	TEST	O	TEST mode signal output
27	MDATA	O	Command data signal output

27	MDATA	O	Command data signal output

Pin No.	Terminal Name	I/O	Function
28	MCLK	O	Command clock signal output
29	MLD	O	Command load signal output
30	STATUS	I	Status signal input
31	NC	-	Not used, open
32			
33	REST SW	I	REST detect switch signal input
34 | 36	NC	-	Not used, open
37	OPEN SW	I	Disc tray open detect switch signal input
38	NC	-	Not used, open
39	H:CR2	O	Connected to GND
40	KEY2	I	Key switches detect signal input
41	KEY1	I	Key switches detect signal input
42	CLOSE SW	I	Disc tray close detect switch signal input

16.2. IC701 (AN8839NSBE2): Servo Amp

Pin No.	Terminal Name	I/O	Function
1	PDE	I	Tracking signal input terminal 1 (E ch)
2	PDF	I	Tracking signal input terminal 2 (F ch)
3	Vcc	I	Power supply terminal
4	PDA	I	Focus signal input terminal 1 (A ch)
5	PDB	I	Focus signal input terminal 2 (B ch)
6	LPD	I	Laser PD signal
7	LD	O	Laser power auto control output
8	RF	O	RF amp terminal
9	RFIN	I	AGC input terminal
10	CSBRT	I	OFTR capacitor connection terminal

Pin No.	Terminal Name	I/O	Function
11	CEA	I	HPF-AMP capacitor connection terminal
12	BDO	O	Dropout detection control
13	LDON	I	LD APC ON/OFF (H: ON)
14	GND	-	GND terminal
15	/RFDET	O	RF detect signal output (L: detect)
16	PDOWN	-	Power down terminal
17	OFTR	O	Off track detection (H: detect)
18	NC	-	Not used, open
19	ENV	O	Envelope signal output
20	NC	-	Not used, open
21			
22	TEN	I	Tracking error signal input
23	TEOUT	O	Tracking error signal output
24	FEOUT	O	Focus error signal output
25	FEN	I	Focus error signal input
26	VREF	O	Reference voltage output
27	TBAL	I	Tracking balance adj. input
28	FBAL	I	Focus balance adj. input

16.3. IC702 (MN662790RSC): Servo Processor/Digital Signal Processor/Digital Filter/ D/A converter

Pin No.	Terminal Name	I/O	Function
1	BCLK	-	Serial bit clock output (Not used, open)
2	LRCK	-	L/R discriminating signal output (Not used, open)
3	SRDATA	-	Serial data signal output (Not used, open)
4	DVDD 1	I	Power supply terminal
5	DVSS 1	-	GND terminal
6	TX	O	Digital audio interface signal output
7	MCLK	I	Command clock signal input
8	MDATA	I	Command data signal input
9	MLD	I	Command load signal input
10	SENSE	-	Sense signal (Not used, open)
11	/FLOCK	-	Optical servo condition (focus) (Not used, open)
12	/TLOCK	-	Optical servo condition (tracking) (Not used, open)
13	BLKCK	O	Sub-code block clock signal output (f=75 Hz)
14	SQCK	I	Sub-code Q resistor clock signal input
15	SUBQ	O	Sub-code Q data signal output
16	DMUTE	I	Muting input (Not used, connected to GND)
17	STAT	O	Status signal output
18	/RST	I	Reset signal input (L: reset)
19	SMCK	-	System clock (Not used, open)
20	CSEL	I	Frequency control terminal of crystal oscillator (Connected to VDD)
21	TRV	-	Traverse servo control signal output (Not used, open)
22	TVD	O	Traverse drive signal output
23	PC	O	Turntable motor drive signal output (L: ON)
24	ECM	O	Turntable motor drive signal output (Forced mode)

			(Forced mode)

Pin No.	Terminal Name	I/O	Function
25	ECS	O	Turntable motor drive signal output (Servo error signal)
26	KICK	-	Kick pulse output (Not used, open)
27	TRD	O	Tracking drive signal output
28	FOD	O	Focus drive signal output
29	VREF	I	D/A drive output normal voltage input
30	FBAL	O	Focus balance adj. output
31	TBAL	O	Tracking balance adj. output
32	FE	I	Focus error signal input
33	TE	I	Tracking error signal input
34	RFENV	I	RF envelope signal input
35	VDET	I	Oscillator detect signal input (H: detect)
36	OFT	I	Off track signal input (H: Off track)
37	TRCRS	I	Track cross signal input
38	/RFDET	I	RF detect signal input (L: detect)
39	BDO	I	Dropout detection signal input (H: dropout)
40	LDON	O	Laser power control signal output (H: ON)
41	PLLF2	-	PLL loop filter terminal (Not used, open)
42	DSLF2	O	DSL loop filter terminal
43	WVEL	-	Double velocity status signal output (Not used, open)
44	ARF	I	RF signal input
45	IREF	I	Reference current input
46	DRF	I	DSL bias terminal
47	DSLF	I/O	DSL loop filter terminal
48	PLLF	I/O	PLL loop filter terminal
49	VCOF	-	VCO loop filter terminal (Not used, connected to GND)
50	AVDD 2	I	Power supply terminal
51	AVSS 2	-	GND terminal
52	EFM	-	EFM signal (Not used, open)
53	PCK	-	PLL extract clock (Not used, open)
54	VCOF2	-	VCO loop filter terminal (Not used, connected to GND)

Pin No.	Terminal Name	I/O	Function
55	SUBC	-	Sub-code serial output clock (Not used, open)
56	SBCK	-	Sub-code serial input data (Not used, connected to GND)
57	VSS	-	GND terminal
58	X1 IN	I	Crystal oscillator terminal (f= 33.8688 MHz)
59	X2 OUT	O	
60	VDD	I	Power supply terminal
61	BYTCK	-	Byte clock signal (Not used, open)
62	/CLDCK	-	Sub-code frame clock signal (Not used, open)
63	FCLK	-	Crystal frame clock (Not used, open)
64	IPFLAG	-	Interpolation flag terminal (Not used, open)
65	FLAG	-	Flag terminal (Not used, open)
66	CLVS	-	Turntable servo phase synchro signal (Not used, open)
67	CRC	-	Sub-code CRC check terminal (Not used, open)
68	DEMPH	-	De-emphasis ON signal (Not used, open)
69	RESY	-	Re-synchronizing signal of frame sync. (Not used, open)
70	IOSEL	I	I/O select signal input (Connected to VDD)
71	/TEST	I	Test terminal (Not used, connected to power supply)
72	AVDD 1	I	Power supply terminal
73	OUTL	O	L ch audio signal output
74	AVSS 1	-	GND terminal
75	OUTR	O	R ch audio signal output
76	RSEL	I	Polarity direction control terminal of RF signal (Not used, connected to power supply)
77	IOVDD	I	Power supply terminal
78	PSEL	I	Test terminal (Connected to GND)

Pin No.	Terminal Name	I/O	Function
79	MSEL	I	Output frequency select signal input (Connected to GND)
80	SSEL	I	SUBQ output mode select signal input (Not used, connected to VDD)

16.4. IC703 (AN8739SBE2): Focus Coil/Tracking Coil/ Traverse Motor/Spindle Motor Drive

Pin No.	Terminal Name	I/O	Function
1	/RST	-	Not used, open
2	NC	-	Not used
3	IN2	I	Motor driver 2 input
4	PC2	I	Turntable motor drive signal input (L: ON)
5	NC	-	Not used
6	IN1	I	Motor driver 1 input
7	PVCC 1	I	Driver power supply terminal 1
8	PGND1	-	Driver GND terminal 1
9	NC	-	Not used, connected to GND
10	D1-	O	Traverse motor driver 1 output terminal (-)
11	D1+	O	Traverse motor driver 1 output terminal (+)
12	D2-	O	Spindle motor driver 2 output terminal (-)
13	D2+	O	Spindle motor driver 2 output terminal (+)
14	D3-	O	Tracking coil signal output terminal (-)
15	D3+	O	Tracking coil signal output terminal (+)
16	D4-	O	Focus coil signal output terminal (-)
17	D4+	O	Focus coil signal output terminal (+)
18	NC	-	Not used
19	PGND2	-	Driver GND terminal 2
20	PVCC 2	I	Driver power supply terminal 2
21	VCC	I	Power supply terminal
22	VREF	I	Reference voltage input terminal
23	IN4	I	Motor driver 4 input
24	IN3	I	Motor driver 3 input
25	RSTIN	I	Reset terminal (Not used, connected to GND)
26	NC	-	Not used, connected to GND

17. Replacement Parts List

Notes:

- **Important safety notice:**
  Components identified by ⚠ mark have special characteristics important for safety.
  Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
  When replacing any of components, be sure to use only manufactures specified parts shown in the parts list.
- **The marking [RTL] indicates that Retention Time is Limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependenton the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.**
- **All parts are supplied by MESA.**

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	RHD30082-K	SCREW	4	
2	RKM0413A-N	CABINET	1	
3	XTBS3+8JFZ1	SCREW	1	
4	RGK1326-M	SIDE PANEL(L)	1	
5	RGK1327-M	SIDE PANEL(R)	1	
6	REZ1056-2	FFC(23P)	1	
7	RGK1322-S	TRAY ORNAMENT	1	
8	RKA0114-K	FOOT	4	
8-1	RKA0083-K	CUSHION	4	
9	RYP0973-S	SUB PANEL UNIT	1	
10	RGK1330-S	SIDE ORNAMENT(L)	1	
11	RGL0528-Q	PANEL LIGHT	1	
12	RGK1331-S	SIDE ORNAMENT(R)	1	
13	SHE170-2	P.C.B. SUPPORT	1	
14	XTBS26+8J	SCREW	5	
15	XTB3+5JFZ	SCREW	4	
16	XTBS3+8JFZ1	SCREW	6	
17	XTB3+12JFZ	SCREW	5	
18	XTB3+8JFZ	SCREW	4	
19	RGG0188-S	FRONT PANEL	1	
20	REX1080Y	WIRE ASS'Y(6P)	1	
21	RMN0625	MECHA SPACER(L)	1	
22	RMN0626	MECHA SPACER(R)	1	
101	RFKJXDT07-K	LOADING CHASSIS ASS'Y	1	
101-1	RDG0142	LOADING GEAR(2)	1	
101-2	RDG0193	LOADING GEAR(1)	1	
101-3	RDP0065	PULLEY GEAR	1	
102	REM0019	LOADING MOTOR ASS'Y	1	
104	RGQ0144-K	DISC TRAY	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
105	RAE0152Z-1	TRAVERSE DECK ASS'Y	1	⚠
105-1	SHGD113-1	FLOATING RUBBER	3	
105-2	SNSD38	SCREW	2	
105-3	RAF0150A-1	OPTICAL PICKUP	1	⚠
105-4	RDG0247	DRIVE GEAR	1	
105-5	RDG0248	INTERMEDIATE GEAR	1	
105-6	RXQ0339	TRAVERSE MOTOR ASS'Y	1	
105-7	RXQ0304-1	PLATE	1	
105-8	XQN17+CG5	SCREW	1	
105-9	XQN2+CQ5	SCREW	1	
105-10	XQS2+A3FZ	SCREW	2	
106	RMS0350-1	PIN(B)	1	
107	RMS0627	PIN(A)	1	
108	RME0109	FLOATING SPRING(1)	2	
109	RME0142	FLOATING SPRING(2)	1	
110	RMR0698-K1	TRAVERSE CHASSIS	1	
111	XTV2+6G	SCREW	2	
112	RME0063	LOCK LEVER SPRING	1	
113	RMM0079A-1	SLIDE PLATE 1	1	
114	RML0178-1	LOCK LEVER	1	
115	RFKNLPG440-K	DRIVE ASS'Y	1	
116	RHD20009-1	SCREW	1	
117	RME0087A-1	SPRING	1	
118	RML0349	CONVERSHION LEVER	1	
119	RMM0059A-1	SLIDE PLATE 2	1	
120	RMR0334	MAGNET HOLDER	1	
121	RHM245ZA	MAGNET	1	
122	RXQ0380	DISC HOLDER	1	
123	XTN26+6G	SCREW	3	
124	RMA0793-1	DISC CLAMPER ASS'Y	1	
125	XYN2+F6FZ	SCREW	2	
126	RMG0158	BELT	1	
127	XTN2+6G	SCREW	1	
C201	ECA1CAM221XB	16V 220U	1	
C202	RCE1HKA3R3BG	50V 3.3U	1	F2A1H3R3A015
C203,04	ECUVNE104KBN	25V 0.1U	2	
C240,41	ECUV1H471JCN	50V 470P	2	F1J1H471A025
C242	ECUV1E103ZFN	25V 0.01U	1	F1J1E103A007
C401-03	ECUV1H102KBN	50V 1000P	3	
C405	ECUVNE104ZFN	25V 0.1U	1	F1J1E1040017
C409	ECUV1E103ZFN	25V 0.01U	1	F1J1E103A007
C410	RCE1EM471BV	25V 470U	1	
C412,13	ECUV1E103ZFN	25V 0.01U	2	F1J1E103A007
C414	ECUVNC105ZFN	16V 1U	1	F1J1C105A063
C416	ECA1CAK220XB	16V 22U	1	
C419,20	ECA0JAK221XB	6.3V 220U	2	
C426	ECUV1H101JCN	50V 100P	1	
C701	ECEA0JKA330I	6.3V 33U	1	
C702	ECUVNE104MBN	16V 0.1U	1	F1J1C104A065
C703	ECEA0JKS101	6.3V 100U	1	
C704	ECUVNE104MBN	16V 0.1U	1	F1J1C104A065
C706	ECUV1H272KBN	50V 2700P	1	F1J1H272A592

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C707	ECUV1E273KBN	25V 0.027U	1	
C710	ECUV1H121KCN	50V 120P	1	F1J1H121A507
C711,12	ECUVNE104ZFN	25V 0.1U	2	F1J1E1040017
C713	ECUVNE104MBN	16V 0.1U	1	F1J1C104A065
C714	ECEA0JKS101	6.3V 100U	1	
C715	ECUV1H272KBN	50V 2700P	1	F1J1H272A592
C716	ECUV1H821KBN	50V 820P	1	
C717	ECUVNE104ZFN	25V 0.1U	1	F1J1E1040017
C718	ECUV1E104KBN	25V 0.1U	1	F1J1E1040007
C721,22	ECUV1H030CCN	50V 3P	2	
C723	ECEA1AKS221	10V 220U	1	
C724	ECUVNE104MBN	16V 0.1U	1	F1J1C104A065
C725,26	ECUV1H102KBN	50V 1000P	2	
C727,28	ECEA1HKS010	50V 1U	2	
C730	ECUVNE104ZFN	25V 0.1U	1	F1J1E1040017
C731,32	ECEA1AKS221	10V 220U	2	
C733	ECUVNE104MBN	16V 0.1U	1	F1J1C104A065
C734	ECEA1AKS221	10V 220U	1	
C735-37	ECUVNE104ZFN	25V 0.1U	3	F1J1E1040017
C738	ECUV1H103KBN	50V 0.01U	1	
C739	ECUV1H152KBN	50V 1500P	1	
C742	ECUV1E273KBN	25V 0.027U	1	
C743	ECUVNE104ZFN	25V 0.1U	1	F1J1E1040017
C744	ECUV1E822KBN	25V 8200P	1	
C745	ECUV1E104KBN	25V 0.1U	1	F1J1E1040007
C747	ECUV1H181JCG	50V 180P	1	
C749	ECUV1H222KBN	50V 2200P	1	
C750,51	ECUVNE104MBN	16V 0.1U	2	F1J1C104A065
C752	ECUV1H102KBN	50V 1000P	1	
C753	ECUV1H471KBM	50V 470P	1	
C754	ECUV1H471KBN	50V 470P	1	
C760	ECUV1E104KBN	25V 0.1U	1	F1J1E1040007
C790	ECA1AKF820	10V 82U	1	
CN401	RJP6G18ZA	CONNECTOR(6P)	1	K1KA06A00220
CN402	RJS1A6823	CONNECTOR(23P)	1	K1MN23A00009
CN403	RJS1A6606T1	CONNECTOR(6P)	1	K1MP06A00009
CN701	RJU035T016-1	CONNECTOR(16P)	1	K1MN16B00038
CN702	RJS1A6723-1Q	CONNECTOR(23P)	1	K1MN23B00017
CP790	RJP6G17ZA	CONNECTOR(6P)	1	K1KA06B00117
D201	MA111TX	DIODE	1	MA2J11100L
D221	MA111TX	DIODE	1	MA2J11100L
D222	MA8033L	DIODE	1	MAZ80330L
D404	MA8075MTX	DIODE	1	MAZ80750ML ⚠
D409,10	MA111TX	DIODE	2	MA2J11100L
D500,01	MA111TX	DIODE	2	MA2J11100L
D801	SML79420C	LED	1	
IC201	C2BBFD000248	IC	1	
IC401	C0CAABE00007	IC	1	⚠

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC402	GP1FA550TZ	IC	1	B3ZAZ0000008
IC701	AN8839NSBE2	IC	1	AN8839NSB-E2
IC702	MN662790RSC	IC	1	
IC703	AN8739SBE2	IC	1	AN8739SBTE2
IC790	TA7291S	IC	1	C0GAL0000001
JK401	RJT065K19	SYSTEM(19P)	1	K1FA219B0001
L701,02	RLBN102V-Y	COIL	2	J0JBC0000041
PCB1	REP3121AA-S	MAIN P.C.B.	1	[RTL]
PCB2	REP3121AB-S	PANEL P.C.B.	1	[RTL]
PCB11	REP1960A	LOADING MOTOR P.C.B.	1	[RTL]
PCB12	REP2772A-N	SERVO P.C.B.	1	[RTL]
Q201	DTC114YUA106	TRANSISTOR	1	B1GBCFJN0009
Q401-04	2SC4081STX	TRANSISTOR	4	B1ABCF000021
Q405	2SB1417PQTA	TRANSISTOR	1	2SB14170JA ⚠
Q408,09	DTA143XUT106	TRANSISTOR	2	B1GDCFGH0005
Q500	2SC4081STX	TRANSISTOR	1	B1ABCF000021
Q701	2SB709S	TRANSISTOR	1	2SB07090S
Q702	DTC143XUA106	TRANSISTOR	1	
R101	ERQ16NKWR22E	22	1	⚠
R201	ERJ6GEYJ681V	1/10W 680	1	
R202	ERJ6GEYJ104V	1/10W 100K	1	
R221-28	ERJ6GEYJ101V	1/10W 100	8	
R229	ERJ6GEYJ472V	1/10W 4.7K	1	
R230	ERJ6GEYJ103V	1/10W 10K	1	
R231-35	ERJ6GEYJ101V	1/10W 100	5	
R236	ERJ6GEYJ472V	1/10W 4.7K	1	
R237	ERJ6GEYJ101V	1/10W 100	1	
R238	ERJ6GEYJ472V	1/10W 4.7K	1	
R239	ERJ6GEYJ103V	1/10W 10K	1	
R240,41	ERJ6GEYJ102V	1/10W 1K	2	
R242	ERJ6GEYJ103V	1/10W 10K	1	
R243	ERJ6GEYJ101V	1/10W 100	1	
R244	ERJ6GEYJ472V	1/10W 4.7K	1	
R245,46	ERJ6GEYJ102V	1/10W 1K	2	
R247,48	ERJ6GEYJ472V	1/10W 4.7K	2	
R405	ERJ6GEYJ682V	1/10W 6.8K	1	
R406	ERJ6GEYJ103V	1/10W 10K	1	
R407	ERJ6GEYJ153V	1/10W 15K	1	
R414	ERJ6GEYJ472V	1/10W 4.7K	1	
R423	ERJ6GEYJ272V	1/10W 2.7K	1	
R427	ERJ6GEYJ472V	1/10W 4.7K	1	
R428	ERJ6GEYJ103V	1/10W 10K	1	
R429	ERJ6GEYJ473V	1/10W 47K	1	
R439	ERJ6GEYJ100	1/10W 10	1	ERJ6GEYJ100V
R440	ERJ6GEYJ472V	1/10W 4.7K	1	
R442	ERDS1FJ102	1K	1	⚠
R450	ERJ6GEYJ272V	1/10W 2.7K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R451	ERJ6GEYJ472V	1/10W 4.7K	1	
R452	ERJ6GEYJ272V	1/10W 2.7K	1	
R453	ERJ6GEYJ472V	1/10W 4.7K	1	
R455,56	ERJ6GEYJ102V	1/10W 1K	2	
R458	ERJ6GEYJ102V	1/10W 1K	1	
R459,60	ERJ6GEYJ224V	1/10W 220K	2	
R471-74	ERJ6GEYJ330V	1/10W 33	4	
R500	ERJ6GEYJ223V	1/10W 22K	1	
R501	ERJ6GEYJ331V	1/10W 330	1	
R701	ERJ6GEYJ4R7V	1/10W 4.7	1	
R702	ERJ6GEYJ103V	1/10W 10K	1	
R704	ERJ6GEYJ102V	1/10W 1K	1	
R705	ERJ6GEYJ154V	1/10W 150K	1	
R706	ERJ6GEYJ102V	1/10W 1K	1	
R707	ERJ6GEYJ393V	1/10W 39K	1	
R708	ERJ6GEYJ223V	1/10W 22K	1	
R709	ERJ6GEYJ683V	1/10W 68K	1	
R711	ERJ6GEYJ823	1/10W 82K	1	ERJ6GEYJ823V
R712	ERJ8GEYJ221V	1/8W 220	1	
R714	ERJ6GEYJ682V	1/10W 6.8K	1	
R715	ERJ6GEYJ102V	1/10W 1K	1	
R717,18	ERJ6GEYJ102V	1/10W 1K	2	
R721	ERJ6GEYJ101V	1/10W 100	1	
R723	ERJ6GEYJ682V	1/10W 6.8K	1	
R724	ERJ6GEYJ183V	1/10W 18K	1	
R725	ERJ6GEYJ391V	1/10W 390	1	D0GD391JA003
R727	ERJ6GEYJ682V	1/10W 6.8K	1	
R728,29	ERJ6GEYJ392V	1/10W 3.9K	2	
R731	ERJ6GEYJ682V	1/10W 6.8K	1	
R735,36	ERJ6GEYJ101V	1/10W 100	2	
R741	ERJ6GEYJ473V	1/10W 47K	1	
R742	ERJ6GEYJ224V	1/10W 220K	1	
R744	ERJ6GEYJ124V	1/10W 120K	1	
R749	ERJ6GEYJ472V	1/10W 4.7K	1	
R753	ERJ6GEYJ100	1/10W 10	1	
R800	ERJ6GEYJ472V	1/10W 4.7K	1	
R801	ERJ6GEYJ332V	1/10W 3.3K	1	
R802	ERJ6GEYJ222V	1/10W 2.2K	1	
R803	ERJ6GEYJ152V	1/10W 1.5K	1	
R804	ERJ6GEYJ122V	1/10W 1.2K	1	
R805	ERJ6GEYJ152V	1/10W 1.5K	1	
R806	ERJ6GEYJ122V	1/10W 1.2K	1	
RJ501-04	ERJ6GEY0R00V	CHIP JUMPER	4	
RJ701	ERJ3GEY0R00V	CHIP JUMPER	1	
RJ702-10	ERJ8GEY0R00V	CHIP JUMPER	9	
RJ712-14	ERJ8GEY0R00V	CHIP JUMPER	3	
RJ716,17	ERJ8GEY0R00V	CHIP JUMPER	2	
RJ721,22	ERJ3GEY0R00V	CHIP JUMPER	2	
RJ724	ERJ3GEY0R00V	CHIP JUMPER	1	
RJ726-28	ERJ3GEY0R00V	CHIP JUMPER	3	
RJ731-36	ERJ3GEY0R00V	CHIP JUMPER	6	
RJ750	ERJ3GEY0R00V	CHIP JUMPER	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
S701	RSH1A043-U	SW,REST	1	K0J1BB000022
S790	RSH1A005	SW,OPEN DET.	1	K0J1BB000010
S791	RSH1A005	SW,CLOSE DET.	1	K0J1BB000010
S801-09	EVQ11G05R	SW,PUSH	9	
X201	EF0MC6004T4	OSCILLATOR	1	
X701	RSXB33M8J01T	OSCILLATOR	1	

18. Cabinet Parts Location

19. Loading Unit Parts Location

F010100000YM/KH

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